

JOB ORDER NO.	11131060	P	C420	CD-289980	01 of 17	00
REV NO.		INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	

NOTES UNLESS OTHERWISE SPECIFIED:

- 1

THE TERMINATION RESISTOR MUST BE PRESENT IN EVERY PANEL BUT IT MUST BE CONNECTED TO XCOM1 BY SHORTING XCOM1:1 & XCOM1:2 , XCOM1:3 & XCOM1:4
- 2

VT IS THE VOLTAGE TRANSFORMER
- 3

CTs & VTs ARE TO BE CONNECTED TO THE METERS VIA FT-SWITCH
- 4

H1 IS ANTI-CONDENSATION HEATER TO BE CONNECTED TO 127/220VAC
- 5

USE GROUP MARKER FOR GROUP MARKING
- 6

USE FERRULING FOR CABLE MARKING
- 7

FOR EXTERNAL WIRING OF THE PANELS REFER CABLE SCHEDULING OF THE SUBSTATIONS & FOR TESTING FOLLOW THE TEST DOCUMENTS
- 8

NEUTRAL SHOULD NOT BE CONNECTED TO TH1 THERMOSTAT
- 9

CONNECT RESISTOR R4 BETWEEN TERMINAL 5 & 6 OF XCOM1 & GROUND TERMINAL 6 OF XCOM1 USING YELLOW GREEN WIRE
- 10

ALL THE TERMINAL BLOCKS HAVING EXTERNAL WIRING CONNECTIONS LIKE VT.CT.AC/DC TERMINAL BLOCKS SHOULD HAVE WIRE CONNECTION ON THE SIDE OF TERMINAL BLOCK NOT CLOSE TO PANEL ACCESS DOOR
- 11

ALL THE FERRULES SHOULD BE OUTSIDE RACEWAY, NEAR CONNECTOR & EASILY READABLE WIHTOUT TURNING OR MOVING WIRES.
- 12

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 13

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 14

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 15

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 16

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 17
- 17

WHEN CONNECTING ELECTRICAL WIRES FOR THE RELAYS MAKE SURE TO CONNECT ON THE SIDE MARKED 'A' FOR ALL PIN NUMBERS
18.

FQ1 AND FQ2 ARE THE FIELD CONTACTS ASSOCIATED WITH THE BUS COUPLER DISCONNECTORS FOR SWITCHING.
- 19

XQ ARE LOCATED INSIDE THE METERING PANEL

MANUFACTURER NAME		
AEC		
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NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

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Saudi Electricity Company

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DATE STARTED DATE COMPLETED

OPR'G. DEPT. ENG. DEPT.

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APPROVAL/CERTIFICATION INFORMATION

DOC NO. E-123456 REV NO. 00

SCHEMATIC DIAGRAM, AMR, DCU PANEL

WITH 1 PQ METER WITH RELAY + 1 REV. METER

W/O RELAY, S/S 8833

OASEEM SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	P	C420	CD-289980	01 of 17	00

00	02 OF 17	CD-289980	C420	P	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX		

NOTES UNLESS OTHERWISE SPECIFIED: (CONTINUED)

20

SPECIAL CABLES TO BE USED WITH DC/DC CONVERTER

21

DIAL UP IS THE DEFAULT COMMUNICATION BUT IF GSM IS USED THEN A GSM MODEM & SPECIFIC ANTENNA HAS TO BE PLACED INSTEAD OF DIAL UP MODEM & CONNECTED TO COM2 OF THE DCU

22

GSM MODEM IS TO BE POWERED USING 6 PIN RJ11 CABLE WITH OPEN ENDS. SHORT WIRES 1 AND 4 OF THE CABLE & CONNECT TO TERMINAL BLOCK 4 OF XCOM20 & WIRE 6 OF CABLE TO TERMINAL BLOCK 8 OF XCOM20. THE OTHER END OF CABLE SHOULD BE CONNECTED TO RJ11 PORT OF THE GSM MODEM

23

TERMINAL 10 IN XC1 TO XC4 TO BE CLOSED IF CT CIRCUIT IS NOT EARTHED ANY OTHER PLACE

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11131060	P	C420	CD-289980	02 OF 17	00

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DRAWING CONTROL SHEET	CD-289969

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REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

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Saudi Electricity Company

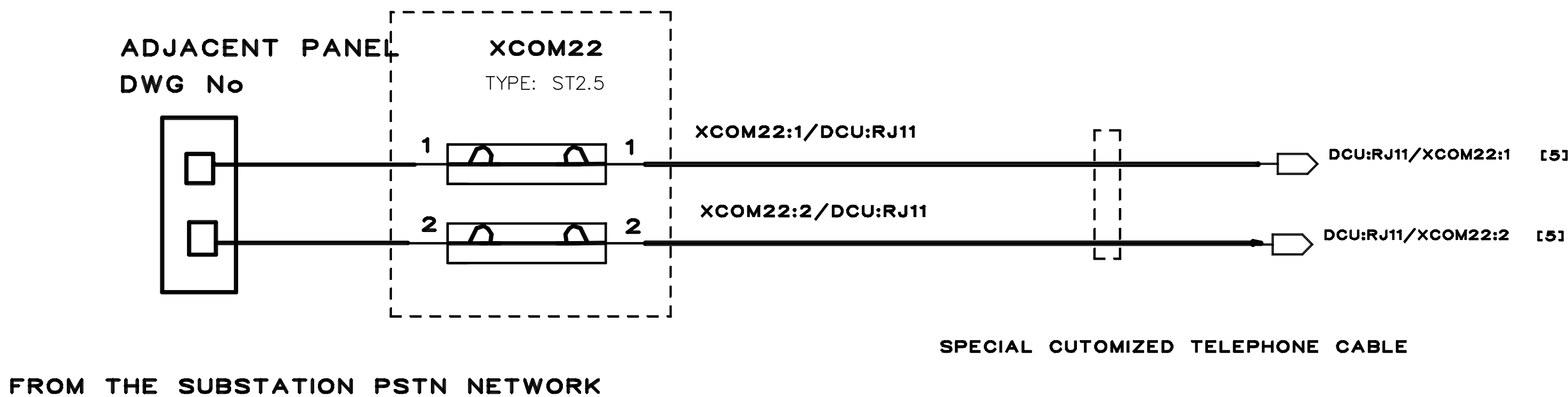
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SCHEMATIC DIAGRAM, AMR, DCU PANEL
WITH 1 PQ METER WITH RELAY + 1 REV. METER
W/O RELAY, S/S 8833

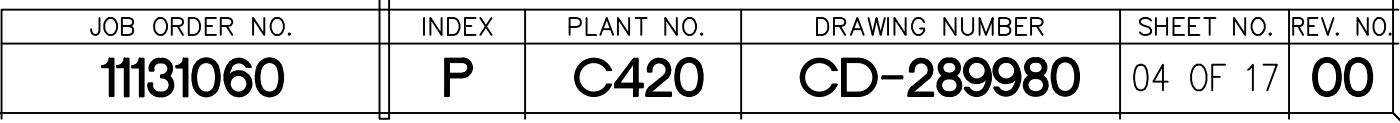
OASEEM SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289980	03 OF 17	00



JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
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MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289980	04 OF 17	00



1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

AT_HEATER — ANTI CONDENSATION
HEATER

H1 — ANTI CONDENSATION HEATER

OT3, OT4 — AC POWER OUTLET

ACDB — AC DISTRIBUTION BOARD

[illegible]

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
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220VAC AND HEATER

CONNECTIONS INSIDE PANEL

S/S 8833

QASEEM

SAUDI ARABIA

JOB ORDER NO.

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.	REV. NO.
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11131060

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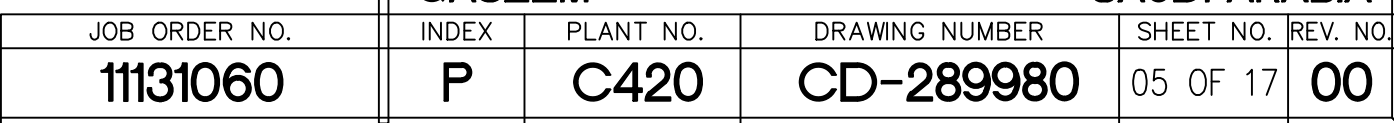
C420

CD-289980

4 OF 17 | 00

EC CAD-A 12004/031
DMS VECTOR

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289980	05 OF 17	00



1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

DCU – DATA COLLECTION UNIT
COM – SERIAL PORT
ADAM-4520 – RS232 TO RS485
CONVERTER

PT-PWR – POWER FOR PRINTER
D-SUB – DIGITAL I/O BOARD CABLE
RS-485 – COMMUNICATION CABLE

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

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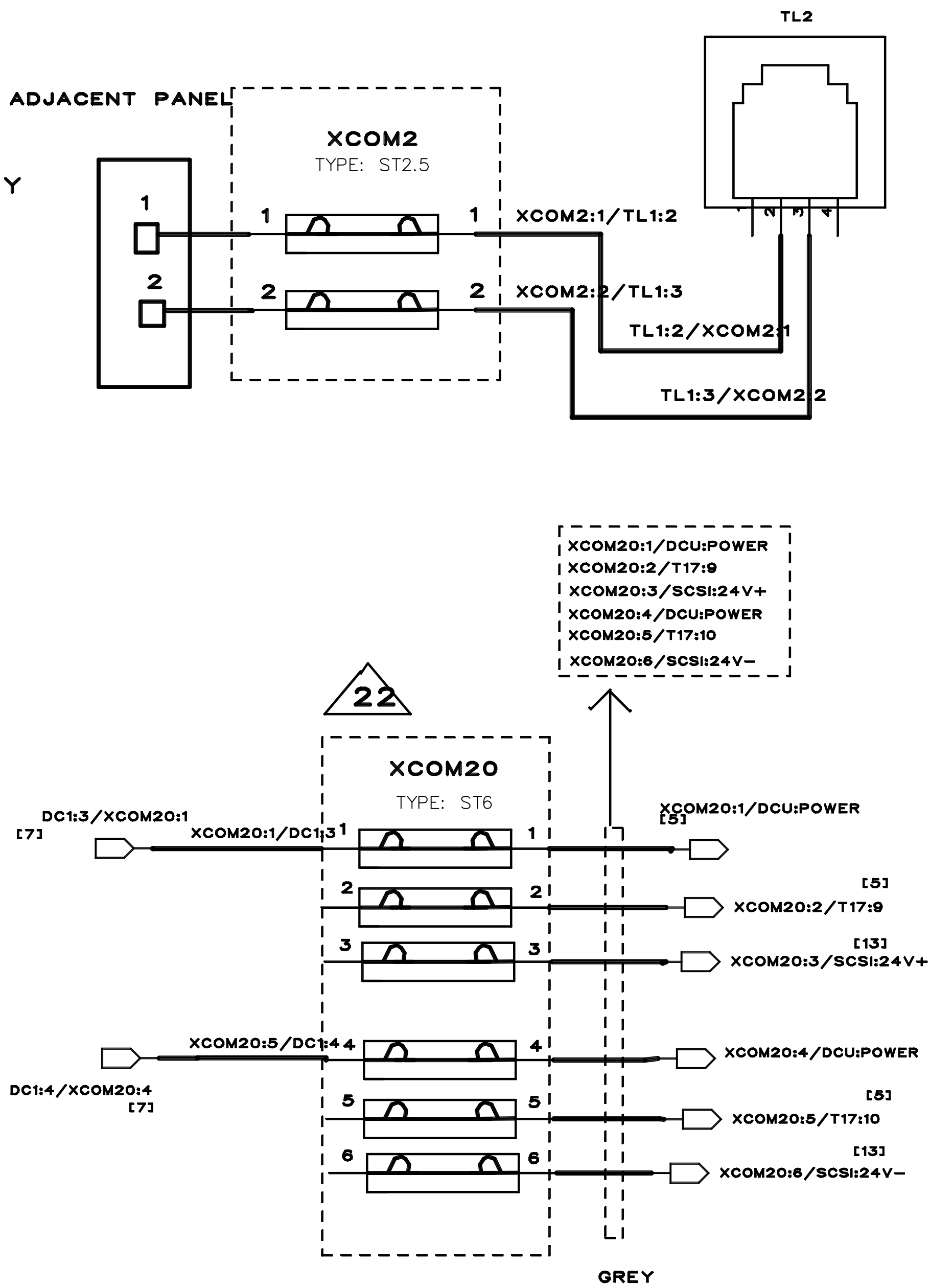
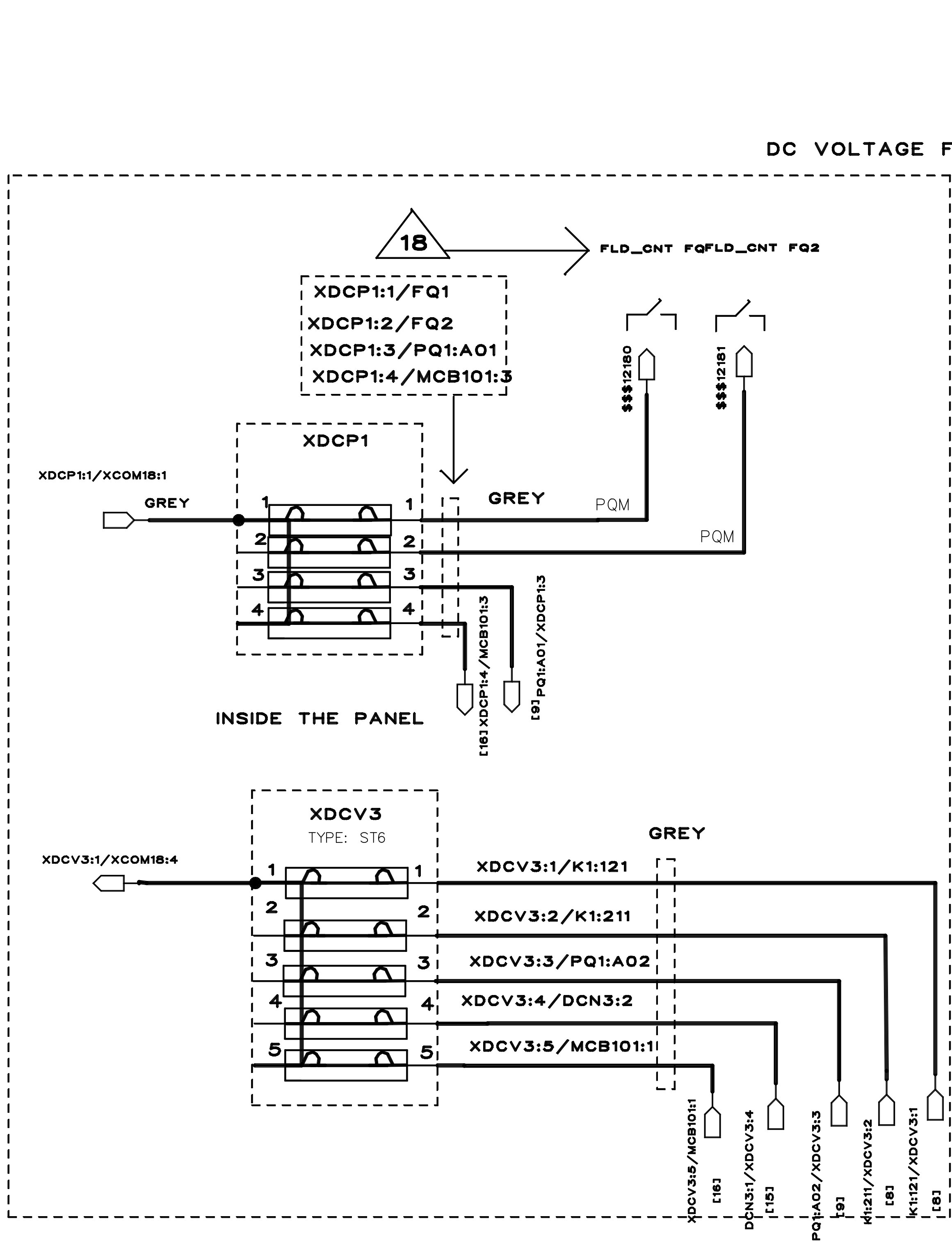
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DCU PC COMMUNICATION
CONNECTIONS INSIDE PANEL
S/S 8833

QASEEM SAUDI ARABIA

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NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

LEGEND

FQ – FIELD CONTACT CONTROLS FOR
SWITCHING BETWEEN BUSBAR

TL – TELEPHONE JACK

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

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125 VDC CONNECTIONS INSIDE PANEL

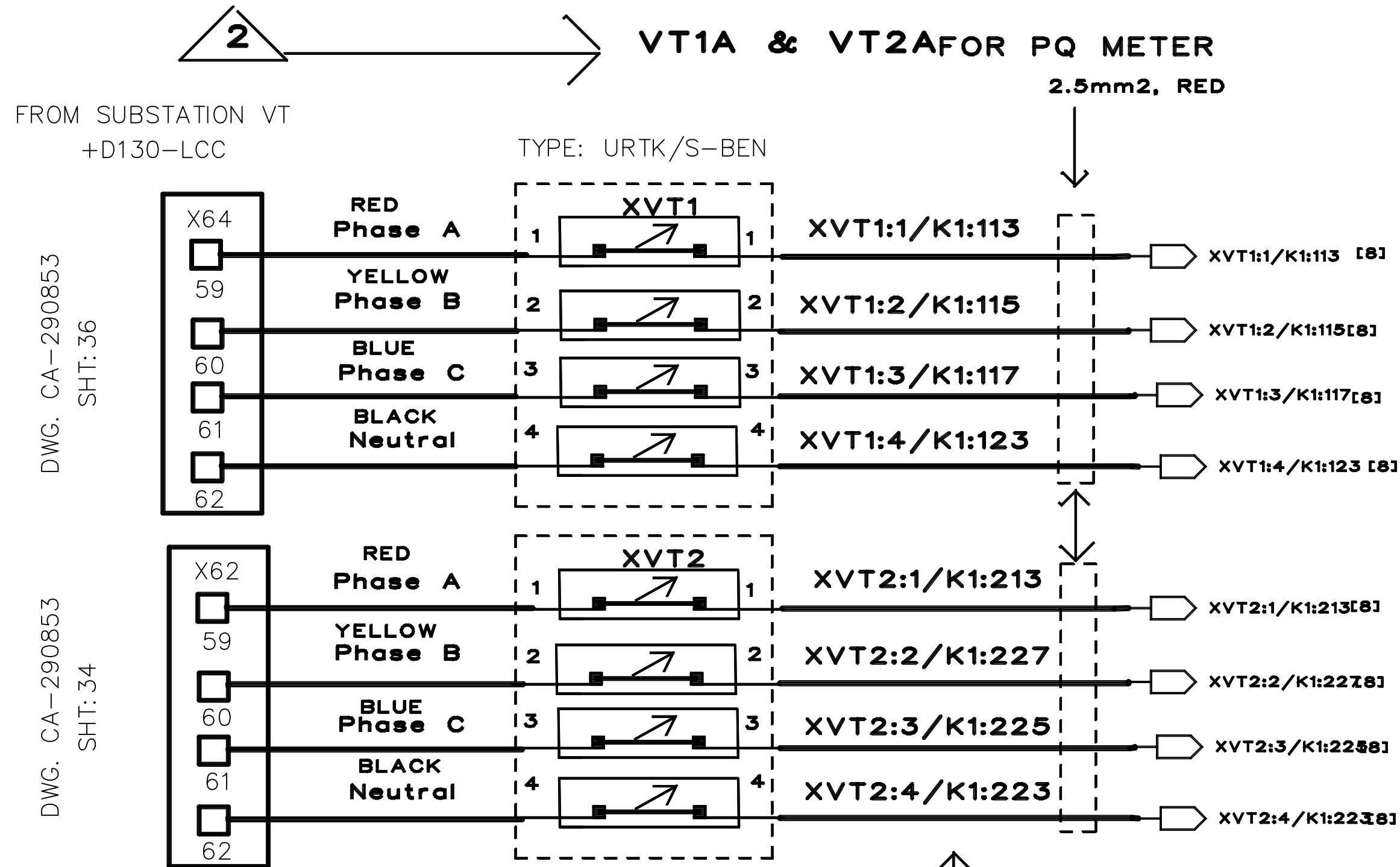
S/S 8833

OASEEM SAUDI ARABIA

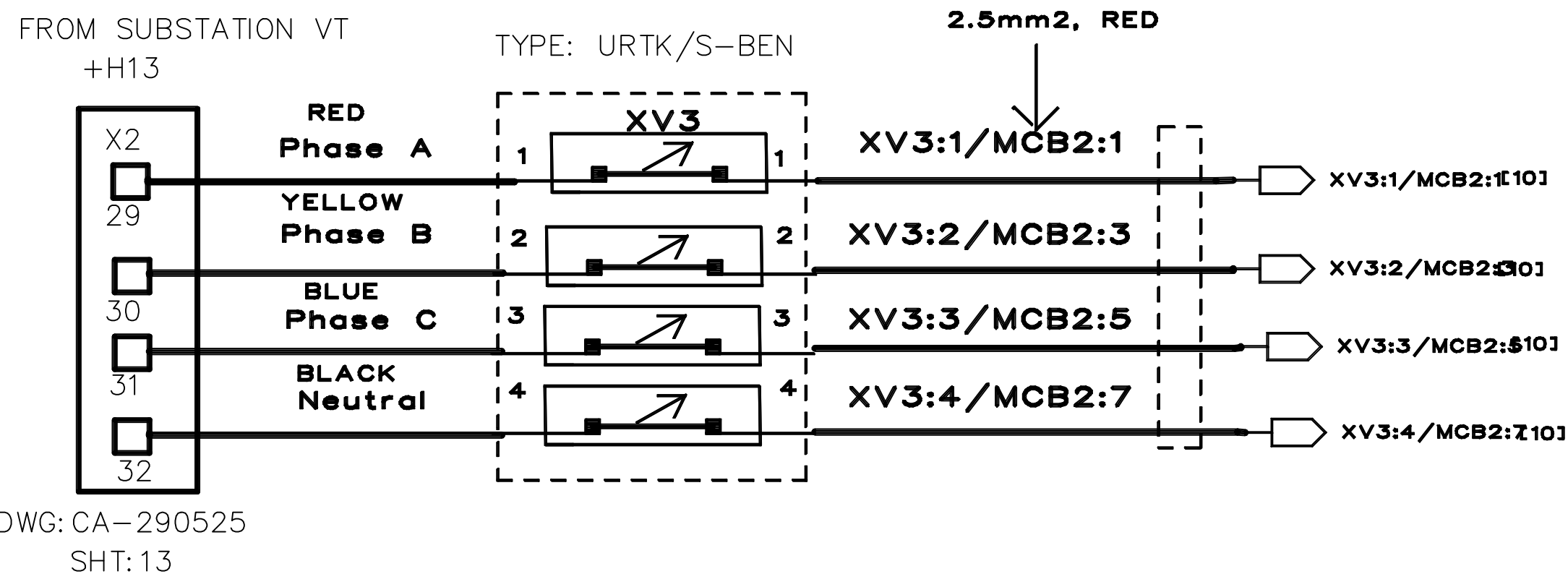
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FROM VOLTAGE TRANSFORMER

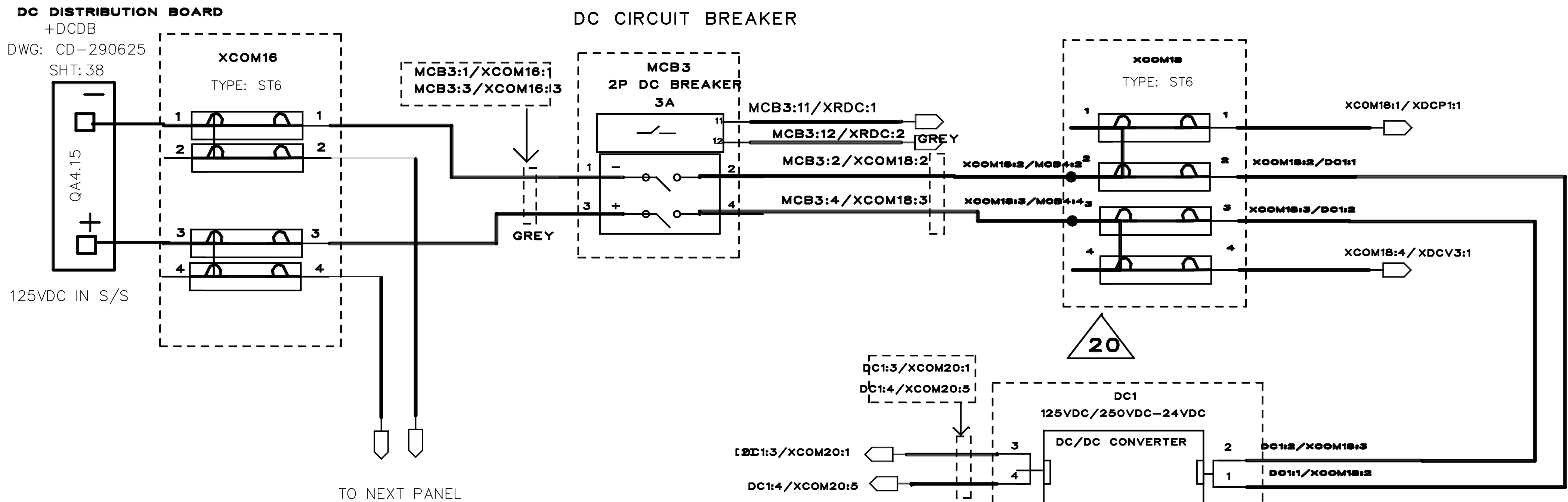


FOR REVENUE METER



ALL INTERNAL WIRES ON THE SIDE OF TERMINAL BLOCK FARTEST FROM PANEL BACK DOOR

DC VOLTAGE



NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

VT1 AND VT2 – VOLTAGE TRANSFORMER PT– SECONDARY FROM DOUBLE BUSBAR

VT3 – VOLTAGE TRANSFORMER PT–SECONDARY

REFERENCE DRAWINGS

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Saudi Electricity Company

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VT CONNECTIONS INSIDE PANEL

S/S 8833

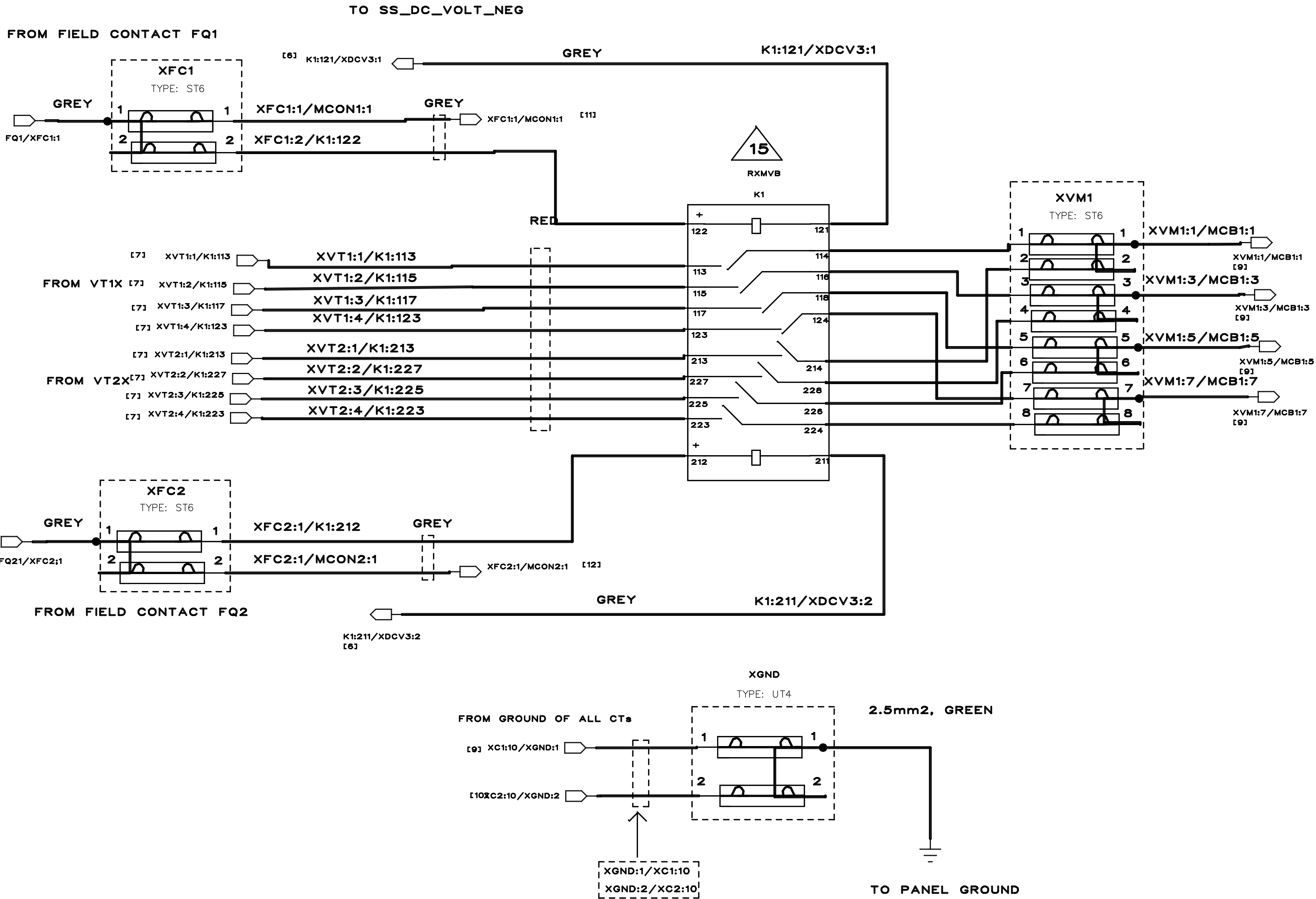
OASEEM SAUDI ARABIA

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11131060	P	C420	CD-289980	07 OF 17 00

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00	08 OF 17	08 OF 17	CD-289980	C420	P	11131060	JOB ORDER NO.
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BISTABLE RELAY FOR PQ METER



NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

LEGEND

K1 – BISTABLE RELAY (ABB) FOR PQM
RXMVB – ABB BISTABLE RELAY TYPE
FQ – FIELD CONTACT

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

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Saudi Electricity Company

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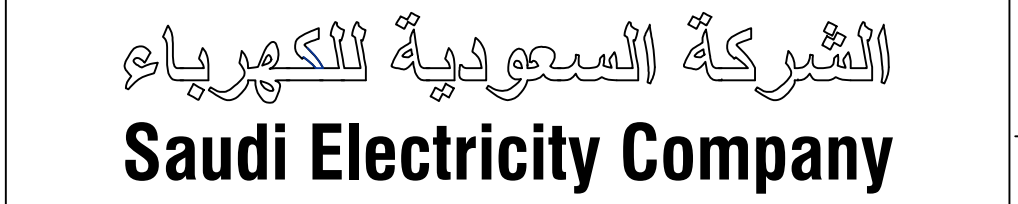
RELAY FOR PQ METER
CONNECTIONS INSIDE PANEL
S/S 8833

OASEEM SAUDI ARABIA

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11131060	P	C420	CD-289980	08 OF 17 00

MANUFACTURER NAME
AEC
DRAWING NO. CD-289980
SHEET NO. 08 OF 17
REV NO. 00

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289980	09 OF 17	00



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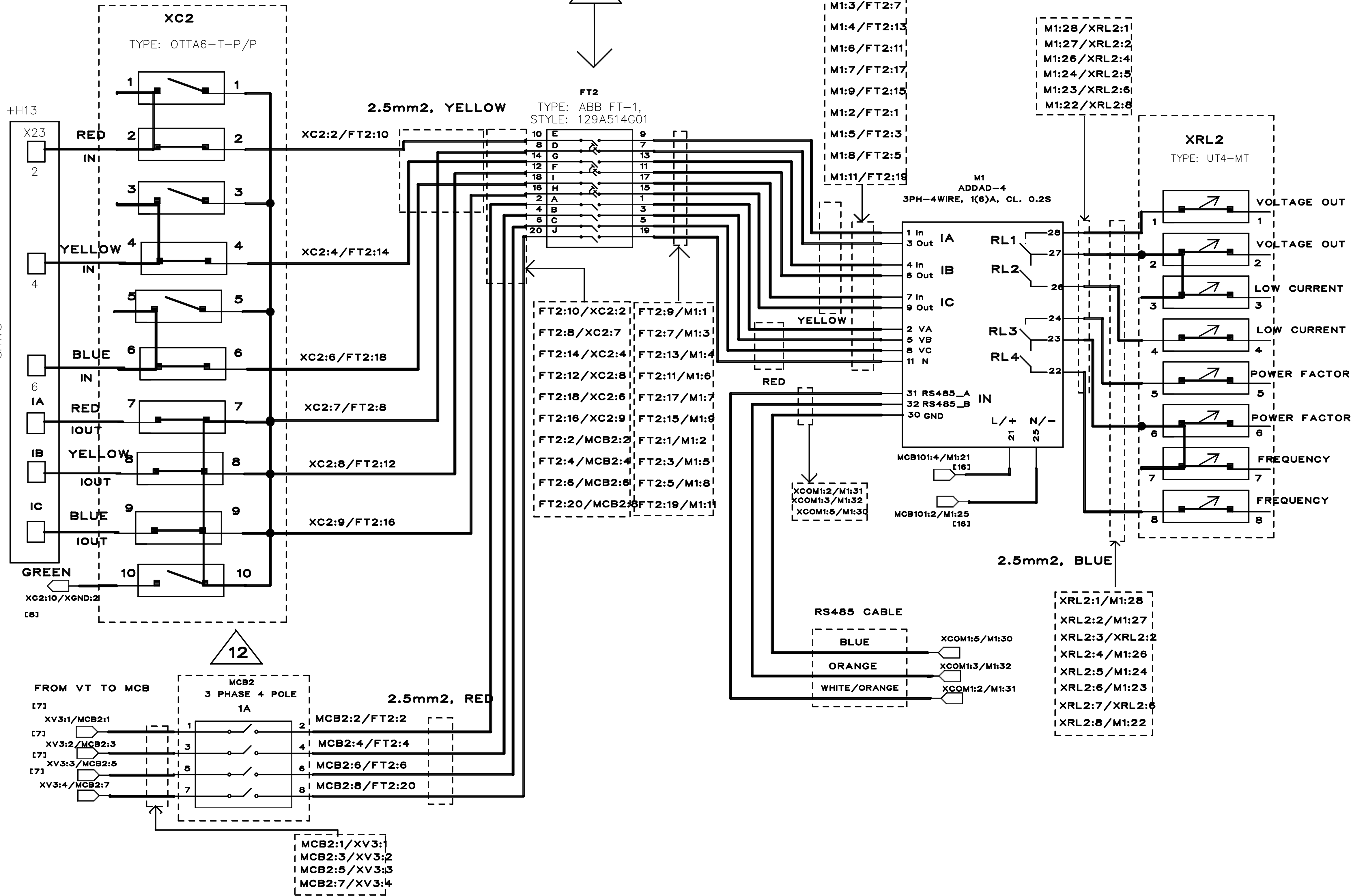
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QASEEM			SAUDI ARABIA	
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C420	CD-289980	09 OF 17	00

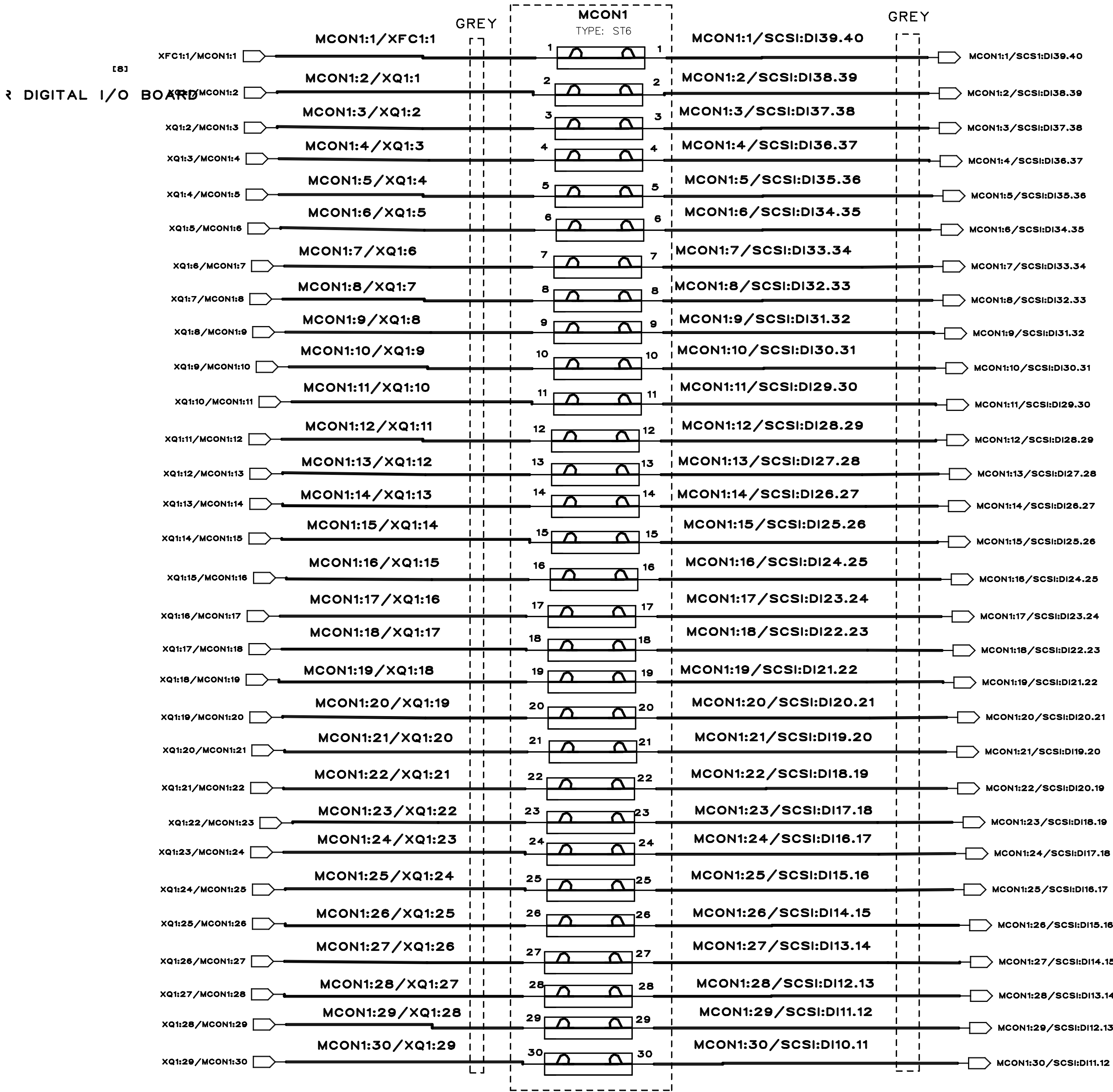
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00	10 OF 17	CD-289980	C420	P	11131060	JOB ORDER NO.
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FROM SUBSTATION CT



00	11 OF 17	CD-289980	C420	P	11131060	JOB ORDER NO.
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MANUFACTURER NAME		
AEC		
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CD-289980	11 OF 17	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
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NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

MCON – CONTROL INPUTS FOR INPUT BOARD

REFERENCE DRAWINGS

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DRAWING CONTROL SHEET	CD-289969

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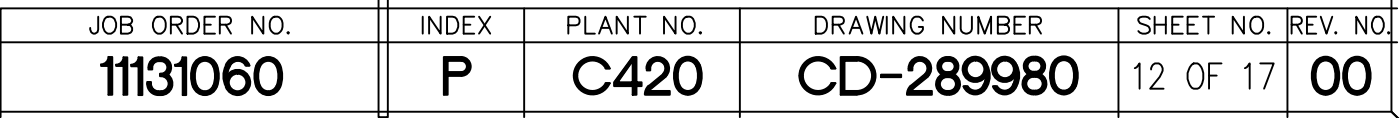
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INPUTS TO DIGITAL I/O BOARD

S/S 8833

OASEEM SAUDI ARABIA

MANUFACTURER NAME		
AEC		
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CD-289980	12 OF 17	00



1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

MCON - CONTROL INPUTS FOR INPUT BOARD

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

الشركة السعودية للكهرباء
Saudi Electricity Company

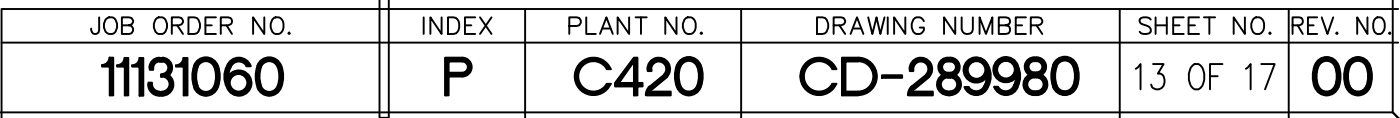
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QASEEM	SAUDI ARABIA
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AEC		
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CD-289980	13 OF 17	00



1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

SCSI – DIGITAL ONPUT OUTPUT BOARD
XRL – DIGITAL O/P SIGNAL FROM DCU

[illegible]

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
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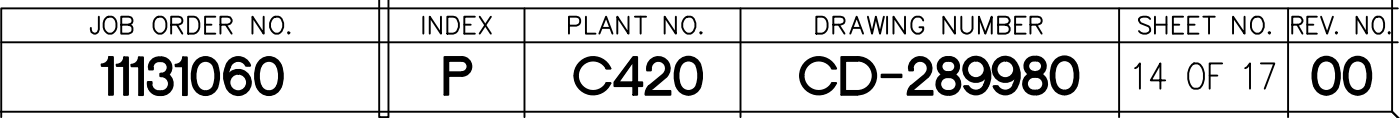
DIGITAL INPUT / OUTPUT BOARD

QASEEM	SAUDI ARABIA
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SEC CAD-A 12004/031

MANUFACTURER NAME		
AEC		
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CD-289980	14 OF 17	00



1. EXISTING PANEL NOS AND EXISTING DRAWING
NOS TO BE VERIFIED AT SITE

DCN — NEGATIVE OF DC VOLTAGE

[illegible]

AS-BUILT			BY _____	DATE _____
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Saudi Electricity Company

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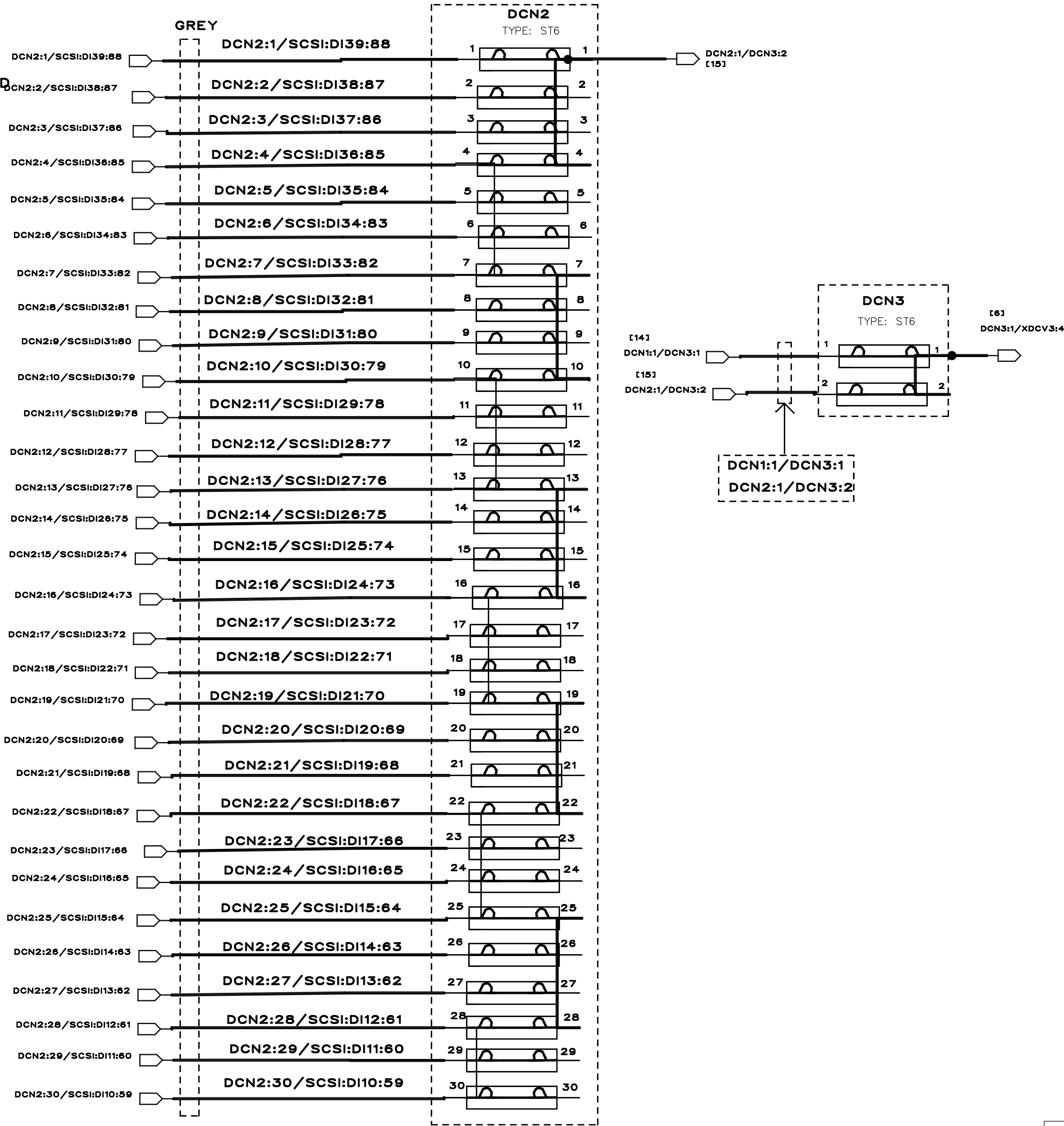
NEGATIVE FORM DIGITAL I/O BOARD

S/S 8833

QASEEM	SAUDI ARABIA
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JOB ORDER NO.	11131060	P	C420	CD-289980	15 OF 17	00
REV NO.						

NEGATIVE OF DIGITAL I/O BOARD



NOTES

1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE

LEGEND

DCN – NEGATIVE OF DC VOLTAGE

REFERENCE DRAWINGS

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NEGATIVE FORM DIGITAL I/O BOARD

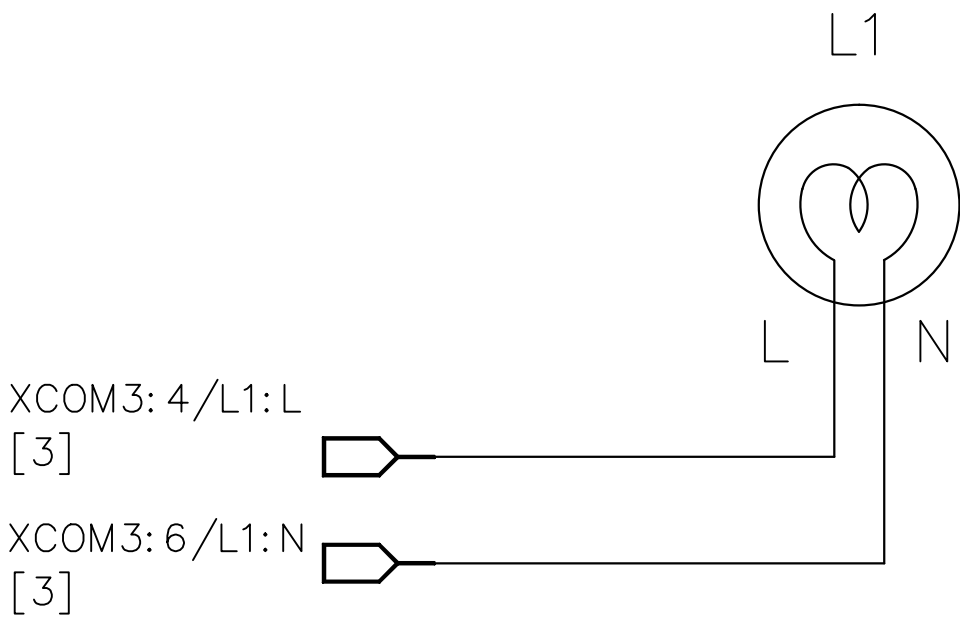
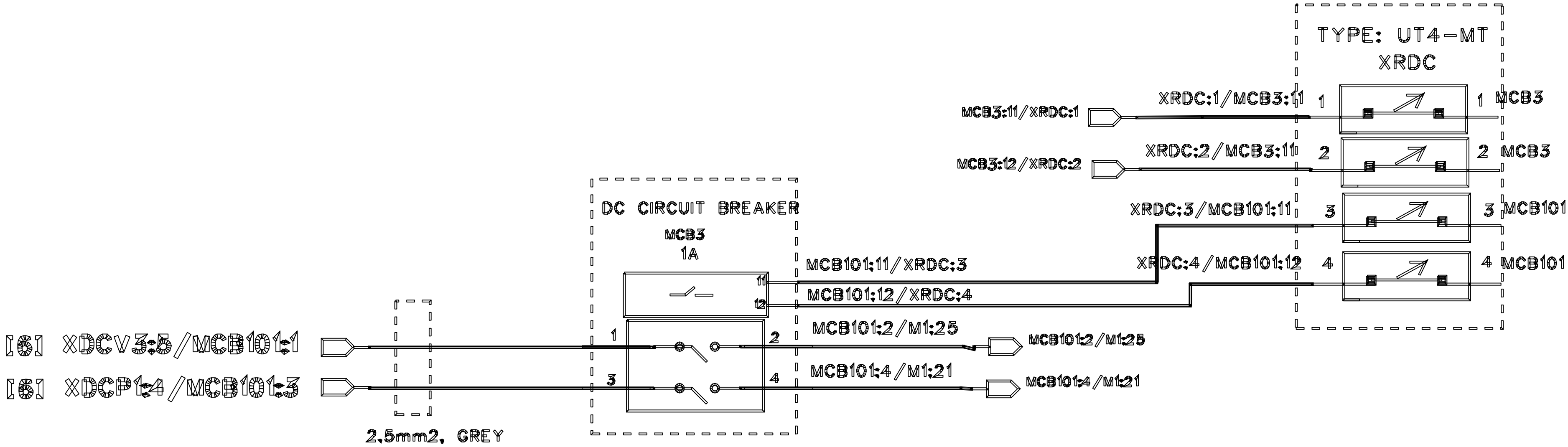
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AEC		
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CD-289980	15 OF 17	00

JOB ORDER NO.	11131060	P	C420	CD-289980	16 OF 17	00
INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.		



MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289980	16 OF 17	00

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11131060	P	C420	CD-289980	16 OF 17	00

NOTES

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NOS TO BE VERIFIED AT SITE

LEGEND

L1 — LAMP

XRDC — O/P OF AUXILIARY CONTACT
MONITORING DC MCB VOLTAGE

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MRA CHECKED BY: AS SCALE: NONE
DATE STARTED: DATE COMPLETED: OPR'G. DEPT.: ENG. DEPT.:

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DC AUX. VOLTAGE FOR REV. METER

S/S 8833

OASEEM SAUDI ARABIA

00	17 OF 17	CD-289980	C420	P	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX		

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289980	17 OF 17	00

12
MCON2:1/SCSI:DI79.9
MCON2:2/SCSI:DI78.10
MCON2:3/SCSI:DI77.11
MCON2:4/SCSI:DI76.12
MCON2:5/SCSI:DI75.13
MCON2:6/SCSI:DI74.14
MCON2:7/SCSI:DI73.15
MCON2:8/SCSI:DI72.16
MCON2:9/SCSI:DI71.17
MCON2:10/SCSI:DI70.18
MCON2:11/SCSI:DI69.19
MCON2:12/SCSI:DI68.20
MCON2:13/SCSI:DI67.21
MCON2:14/SCSI:DI66.22
MCON2:15/SCSI:DI65.23
MCON2:16/SCSI:DI64.24
MCON2:17/SCSI:DI63.25
MCON2:18/SCSI:DI62.26
MCON2:19/SCSI:DI61.27
MCON2:20/SCSI:DI60.28
MCON2:21/SCSI:DI59.29
MCON2:22/SCSI:DI58.30
MCON2:23/SCSI:DI57.31
MCON2:24/SCSI:DI56.32
MCON2:25/SCSI:DI55.33
MCON2:26/SCSI:DI54.34
MCON2:27/SCSI:DI53.35
MCON2:28/SCSI:DI52.36
MCON2:29/SCSI:DI51.37
MCON2:30/SCSI:DI50.38

13
SCSI:DI79.9/MCON2:1
SCSI:DI79.57/DCN1:1
SCSI:DI78.10/MCON2:2
SCSI:DI78.58/DCN1:2
SCSI:DI77.11/MCON2:3
SCSI:D77.59/DCN1:3
SCSI:DI76.12/MCON2:4
SCSI:DI76.60/DCN1:4
SCSI:DI75.13/MCON2:5
SCSI:DI75.61/DCN1:5
SCSI:DI74.14/MCON2:6
SCSI:D74.62/DCN1:6
SCSI:DI73.15/MCON2:7
SCSI:DI73.63/DCN1:7
SCSI:DI72.16/MCON2:8
SCSI:DI72.64/DCN1:8
SCSI:DI71.17/MCON2:9
SCSI:D71.65/DCN1:9
SCSI:DI70.18/MCON2:10
SCSI:DI70.66/DCN1:10
SCSI:DI69.19/MCON2:11
SCSI:DI69.67/DCN1:11
SCSI:DI68.20/MCON2:12
SCSI:D68.68/DCN1:12
SCSI:DI67.21/MCON2:13
SCSI:DI67.69/DCN1:13
SCSI:DI66.22/MCON2:14
SCSI:DI66.70/DCN1:14
SCSI:DI65.23/MCON2:15
SCSI:D65.71/DCN1:15
SCSI:DI64.24/MCON2:16
SCSI:DI64.72/DCN1:16
SCSI:DI63.25/MCON2:17
SCSI:DI63.73/DCN1:17
SCSI:DI62.26/MCON2:18
SCSI:DI62.74/DCN1:18
SCSI:DI61.27/MCON2:19
SCSI:DI61.75/DCN1:19
SCSI:DI60.28/MCON2:20
SCSI:DI60.76/DCN1:20
SCSI:DI59.29/MCON2:21
SCSI:D59.77/DCN1:21
SCSI:DI58.30/MCON2:22
SCSI:DI58.78/DCN1:22
SCSI:DI57.31/MCON2:23
SCSI:DI57.79/DCN1:23
SCSI:DI56.32/MCON2:24
SCSI:D56.80/DCN1:24

13
SCSI:DI55.33/MCON2:25
SCSI:DI55.81/DCN1:25
SCSI:DI54.34/MCON2:26
SCSI:DI54.82/DCN1:26
SCSI:DI53.35/MCON2:27
SCSI:D53.83/DCN1:27
SCSI:DI52.36/MCON2:28
SCSI:DI52.84/DCN1:28
SCSI:DI51.37/MCON2:29
SCSI:DI51.85/DCN1:29
SCSI:DI50.38/MCON2:30
SCSI:D50.86/DCN1:30

16
MCON1:1/SCSI:DI39.40
MCON1:2/SCSI:DI38.39
MCON1:3/SCSI:DI37.38
MCON1:4/SCSI:DI36.37
MCON1:5/SCSI:DI35.36
MCON1:6/SCSI:DI34.35
MCON1:7/SCSI:DI33.34
MCON1:8/SCSI:DI32.33
MCON1:9/SCSI:DI31.32
MCON1:10/SCSI:DI30.31
MCON1:11/SCSI:DI29.30
MCON1:12/SCSI:DI28.29
MCON1:13/SCSI:DI27.28
MCON1:14/SCSI:DI26.27
MCON1:15/SCSI:DI25.26
MCON1:16/SCSI:DI24.25
MCON1:17/SCSI:DI23.24
MCON1:18/SCSI:DI22.23
MCON1:19/SCSI:DI21.22
MCON1:20/SCSI:DI20.21
MCON1:21/SCSI:DI19.20
MCON1:22/SCSI:DI18.19
MCON1:23/SCSI:DI17.18
MCON1:24/SCSI:DI16.17
MCON1:25/SCSI:DI15.16
MCON1:26/SCSI:DI14.15
MCON1:27/SCSI:DI13.14
MCON1:28/SCSI:DI12.13
MCON1:29/SCSI:DI11.12
MCON1:30/SCSI:DI10.11

14
SCSI:DO7.48/XRL3:1
SCSI:DO7.96/XRL3:2
SCSI:DO7.47/XRL3:3
SCSI:DO7.95/XRL3:4
SCSI:DO7.46/XRL3:5
SCSI:DO7.94/XRL3:6
SCSI:DO7.45/XRL3:7
SCSI:DO7.93/XRL3:8
SCSI:DO7.44/XRL3:9
SCSI:DO7.92/XRL3:10
SCSI:DO7.43/XRL3:11
SCSI:DO7.91/XRL3:12
SCSI:DO7.42/XRL3:13
SCSI:DO7.90/XRL3:14
SCSI:DO7.41/XRL3:15
SCSI:DO7.89/XRL3:16
SCSI:DI39.40/MCON1:1
SCSI:DI39.88/DCN2:1
SCSI:DI38.39/MCON1:2
SCSI:DI38.87/DCN2:2
SCSI:DI37.38/MCON1:3
SCSI:D37.86/DCN2:3
SCSI:DI36.37/MCON1:4
SCSI:DI36.85/DCN2:4
SCSI:DI35.36/MCON1:5
SCSI:DI35.84/DCN2:5
SCSI:DI34.35/MCON1:6
SCSI:D34.83/DCN2:6
SCSI:DI33.34/MCON1:7
SCSI:DI33.82/DCN2:7
SCSI:DI32.33/MCON1:8
SCSI:DI32.81/DCN2:8
SCSI:DI31.32/MCON1:9
SCSI:DI31.80/DCN2:9
SCSI:DI30.31/MCON1:10
SCSI:DI30.79/DCN2:10
SCSI:DI29.30/MCON1:11
SCSI:DI29.78/DCN2:11
SCSI:DI28.29/MCON1:12
SCSI:DI28.77/DCN2:12
SCSI:DI27.28/MCON1:13
SCSI:DI27.76/DCN2:13
SCSI:DI26.27/MCON1:14
SCSI:DI26.75/DCN2:14
SCSI:DI25.26/MCON1:15
SCSI:DI25.74/DCN2:15
SCSI:DI24.25/MCON1:16
SCSI:DI24.73/DCN2:16

14
SCSI:DI23.24/MCON1:17
SCSI:DI23.72/DCN2:17
SCSI:DI22.23/MCON1:18
SCSI:DI22.71/DCN2:18
SCSI:DI21.22/MCON1:19
SCSI:DI21.70/DCN2:19
SCSI:DI20.21/MCON1:20
SCSI:DI20.69/DCN2:20
SCSI:DI19.20/MCON1:21
SCSI:DI19.68/DCN2:21
SCSI:DI18.19/MCON1:22
SCSI:DI18.67/DCN2:22
SCSI:DI17.18/MCON1:23
SCSI:DI17.66/DCN2:23
SCSI:DI16.17/MCON1:24
SCSI:DI16.65/DCN2:24
SCSI:DI15.16/MCON1:25
SCSI:DI15.64/DCN2:25
SCSI:DI14.15/MCON1:26
SCSI:DI14.63/DCN2:26
SCSI:DI13.14/MCON1:27
SCSI:DI13.62/DCN2:27
SCSI:DI12.13/MCON1:28
SCSI:DI12.61/DCN2:28
SCSI:DI11.12/MCON1:29
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SCSI:DI10.11/MCON1:30
SCSI:DI10.59/DCN2:30

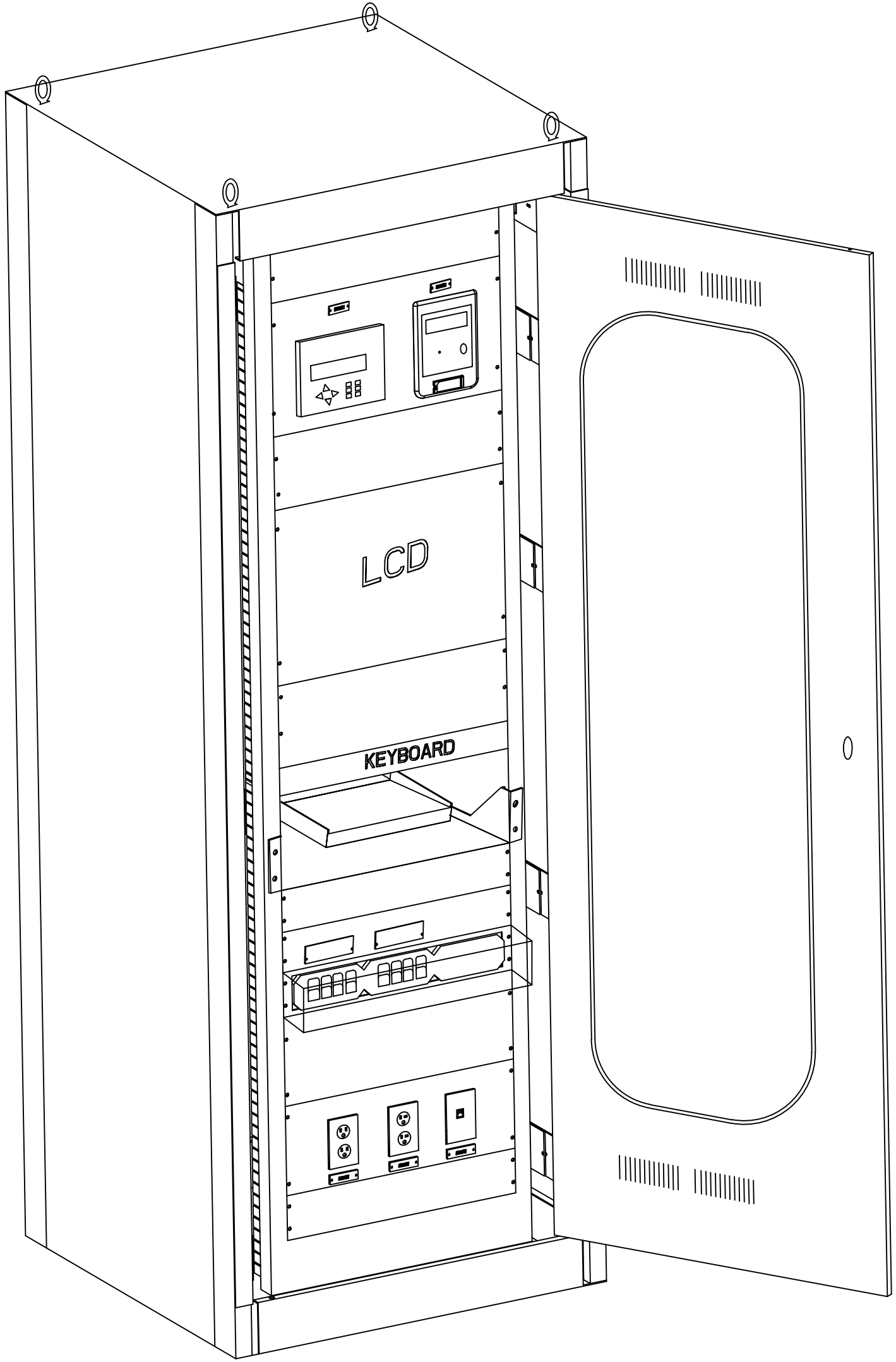
15
XRL3:1/SCSI:DO7.48
XRL3:2/SCSI:DO7.96
XRL3:3/SCSI:DO6.47
XRL3:4/SCSI:DO6.95
XRL3:5/SCSI:DO5.46
XRL3:6/SCSI:DO5.94
XRL3:7/SCSI:DO4.45
XRL3:8/SCSI:DO4.93
XRL3:9/SCSI:DO3.44
XRL3:10/SCSI:DO3.92
XRL3:11/SCSI:DO2.43
XRL3:12/SCSI:DO2.91
XRL3:13/SCSI:DO1.42
XRL3:14/SCSI:DO1.90
XRL3:15/SCSI:DO0.41
XRL3:16/SCSI:DO0.89

NOTES					
1. EXISTING PANEL NOS AND EXISTING DRAWING NOS TO BE VERIFIED AT SITE					

JOB ORDER NO.	11131060	A	C420	CD-289981	01 OF 04	00
INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.		

PANEL SPECIFICATIONS :

1. THE PANEL IS MADE OF 2MM THICKNESS STEEL SHEET INCLUDING THE DOORS.
2. PANEL’S BOTTOM COVERED BY THREE PLATES EACH FABRICATED FROM 3MM THICKNESS STEEL SHEET.
3. THE PANEL IS POWDER COATED BY RAL 7038 FROM OUTSIDE AND RAL 9003 FROM INSIDE.
4. THE PANEL IS FABRICATED ACCORDING TO CLAUSE NO. 4.1 OF 31-TMSS-01.



DESCRIPTION
DCU PANEL, ONE POWER QUALITY WITH RELAY AND ONE REVENUE METER WITHOUT RELAY, 3P4W ADDAD 1(6)A,

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289981	01 OF 04	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	A	C420	CD-289981	01 of 04	00

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.

2. PANEL IS CONSTRUCTED ACCORDING TO 31-TMSS-01.

3. THE PANEL IS POWDER COATED BY RAL 7038 FROM OUTSIDE AND RAL 9003 FROM INSIDE.

LEGEND

GA : GENERAL ASSEMBLY

LA : LIST OF APPARATUS

RM : REVENUE METER

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD
0	12/01	AM	DETAIL DESIGN	AM	AS	

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Saudi Electricity Company

DRAWN BY: AM

CHECKED BY: AS

SCALE: NONE

DATE STARTED:

DATE COMPLETED:

OPR'G. DEPT.:

ENG. DEPT.:

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APPROVAL/CERTIFICATION INFORMATION
DOC NO. E-123456 REV NO. 00

S/S 8833, GA AND LA DRAWING

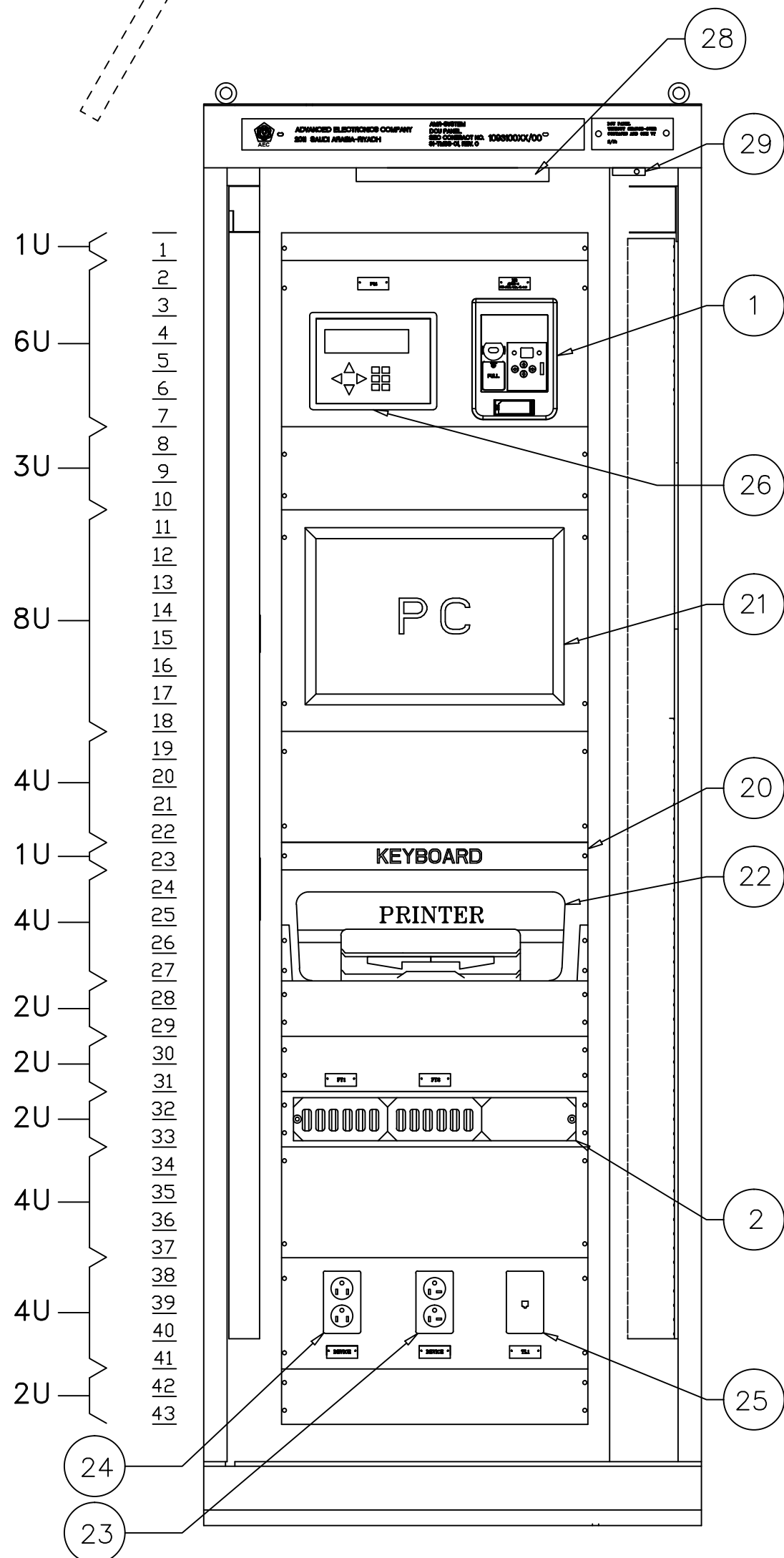
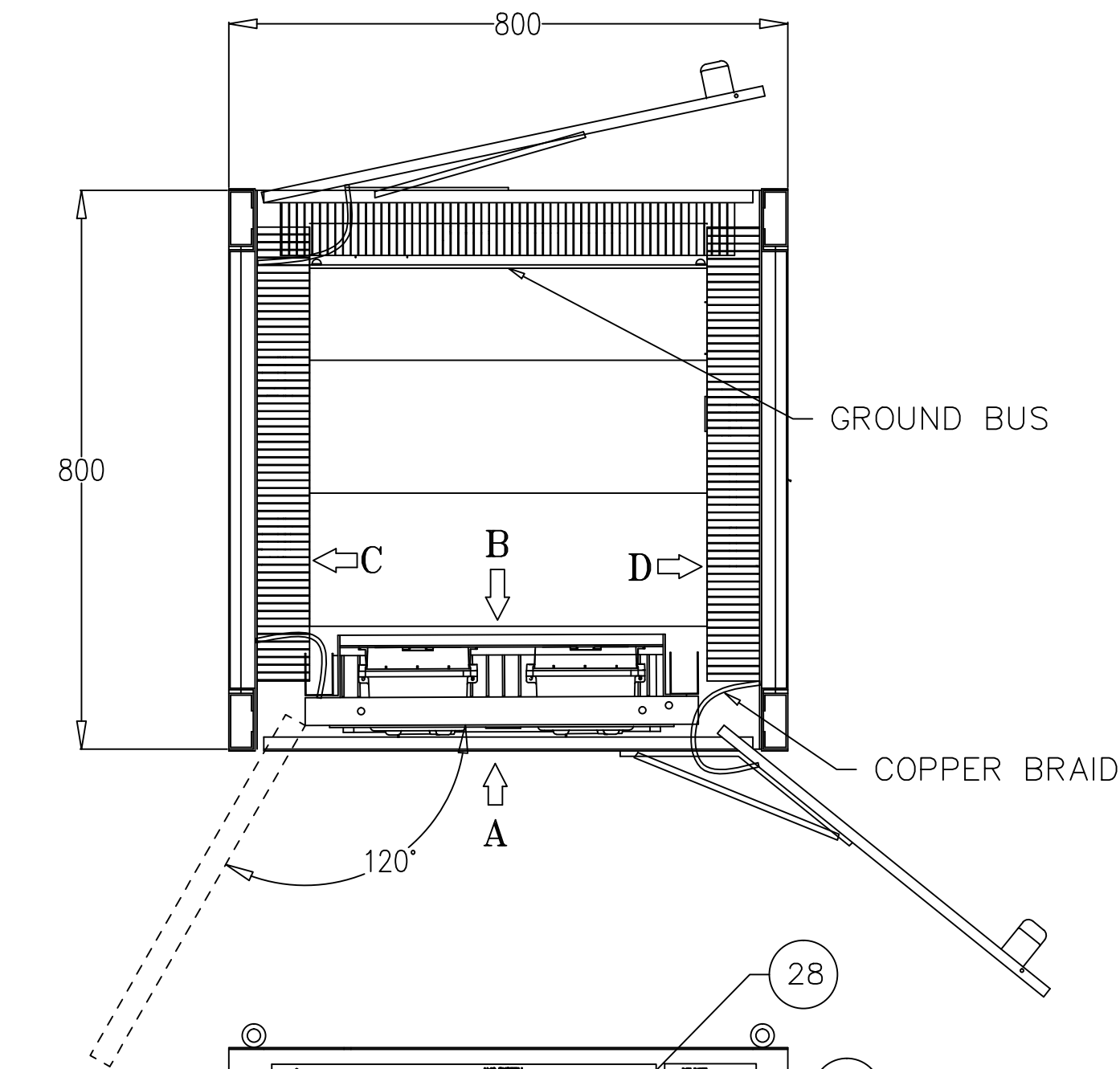
DCU PANEL, 1 PQ WITH RELAY AND 1 RM

WITHOUT RELAY, 3P4W ADDAD

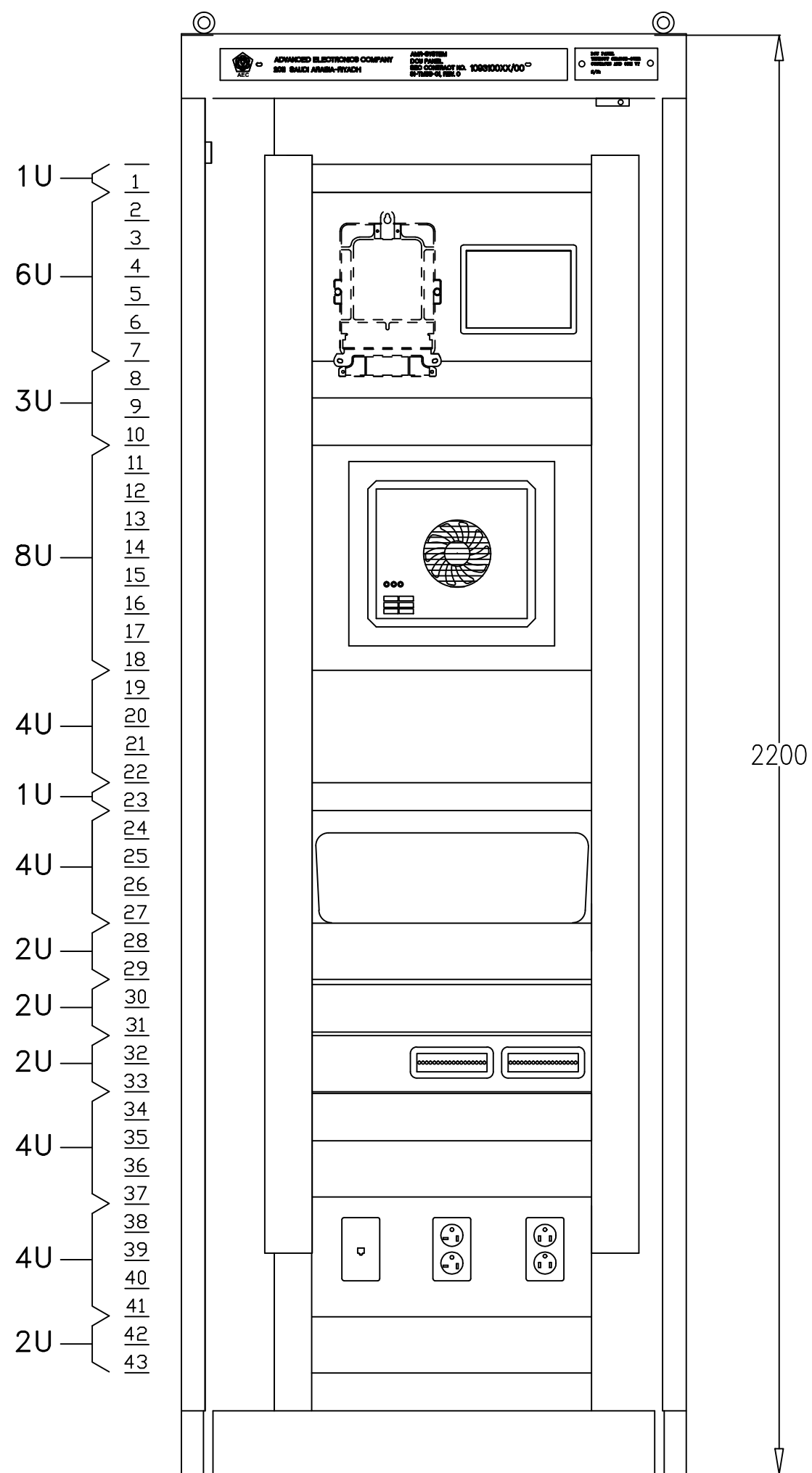
OASEEM

SAUDI ARABIA

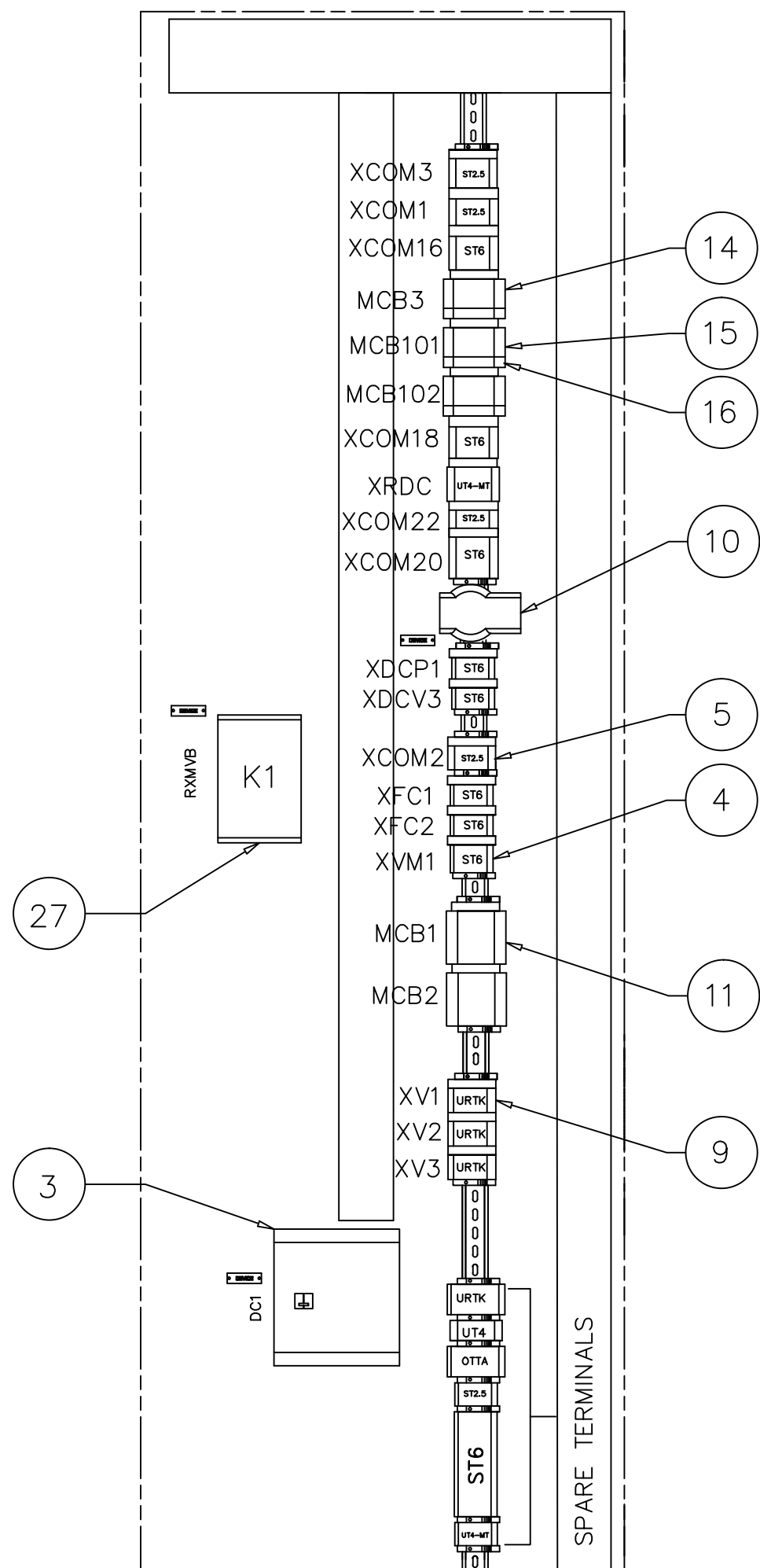
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.
11131060	A	C420	CD-289981	02 OF 04	00



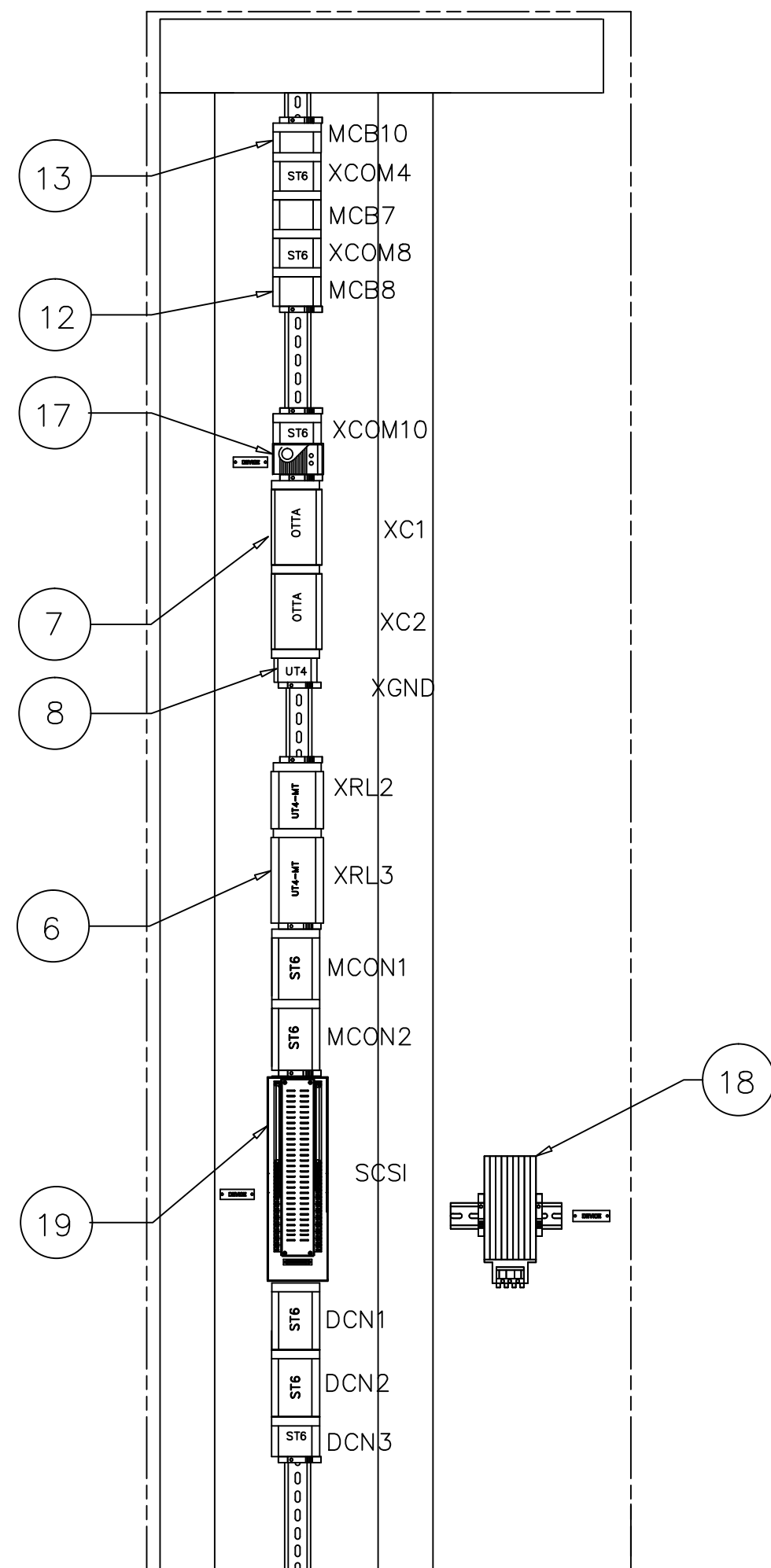
FRONT VIEW OPEN DOOR
PLAN-A



PLAN-B



PANEL INTERIOR BASE LEVEL
PLAN-C



PANEL INTERIOR BASE LEVEL
PLAN-D

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.
2. PANEL IS CONSTRUCTED ACCORDING TO 31-TMSS-01.
3. LIMIT SWITCH LOCATION IS CHANGEABLE ACCORDING TO PANEL MANUFACTURER STANDARD.
4. GLASS SHEET THICKNESS: 5MM
5. GROUND BUS CROSS SECTION: 5MM X 30MM
6. COPPER BRAID SIZE: 12MM SQ.

LEGEND

GA : GENERAL ASSEMBLY
LA : LIST OF APPARATUS
RM : REVENUE METER

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD
0	12/01	AM	DETAIL DESIGN	AM	AS	

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Saudi Electricity Company

DRAWN BY: AM CHECKED BY: AS SCALE: NONE
DATE STARTED: _____ DATE COMPLETED: _____
OPR'G. DEPT.: _____ ENG. DEPT.: _____

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APPROVAL/CERTIFICATION INFORMATION
DOC NO. E-123456 REV NO. 00

S/S 8833, GA AND LA DRAWING
DCU PANEL, 1 PQ WITH RELAY AND 1 RM
WITHOUT RELAY, 3P4W ADDAD
OASEEM SAUDI ARABIA

MANUFACTURER NAME
AEC
DRAWING NO. CD-289981
SHEET NO. 02 OF 04
REV NO. 00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	A	C420	CD-289981	02 OF 04 00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.
11131060	A	C420	CD-289981	03 OF 04	00

PARTS LIST					
QTY	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPECIFICATION	ITEM
1	SE455	900-003524	ADDAD-4 CLO.2S , TOP ASSEMBLY, RS485 1(6)A	AEC, RIYADH	1
1		FR2H014014000N	FT-SWITCH KIT, 2	ABB RIYADH, KIT OF 2 FT-SWITCH, WITH SCREWS, COVER AND MOUNTING PLATE 2U	2
1		HFRii24/4-125/250	DC/DC CONVERTER	C~CAN,	3
100		3031487	SPRING -CAGE FEED-THROUGH MODULAR TERMINAL BLOCK, ST6	PHOENIX	4
22		3031212	SPRING -CAGE FEED-THROUGH MODULAR TERMINAL BLOCK, ST2.5	PHOENIX	5
33		3046139	DISCONNECT TYPE SCREW CONNECTION FEED-THROUGH MODULAR TERMINAL BLOCK UT4-MT.	PHOENIX	6
22		0790462	DISCONNECT TYPE TERMINAL BLOCK OTTA 6-T-P/P	PHOENIX	7
3		3044102	SCREW CONNECTION TYPE FEED-THROUGH MODULAR TB UT4	PHOENIX	8
14		0309086	DISCONNECT TYPE TERMINAL BLOCK URTK/S-BEN	PHOENIX	9
1		ADAM-4520-D2E	ISOLATED RS485 TO RS232 CONVERTER	ADVANTCH; C3 AUTOMATION	10
2		25007	AC MCB, 3P4P 1A	SCHNEIDER, C60H, C CURVE, THREE PHASE 4 POLE, 1A	11
2		25855	AC MCB, 1P2P 6A	SCHNEIDER, C60H, B CURVE, SINGLE PHASE 2 POLE, 6A	12
1		25640	AC MCB, 1P1P 2A	SCHNEIDER, C60H, C CURVE, SINGLE PHASE 1 POLE, 2A	13
1		MGN61523	DC MCB, 2P 3A	SCHNEIDER, C60H, C CURVE, 2 POLE DC MCB, 3A	14
2		MGN61521	DC MCB, 2P 1A	SCHNEIDER, C32H, U CURVE, 2 POLE DC MCB, 1A	15
3		26924	AUXILIARY CONTACT, TYPE "OF"	SCHNEIDER,	16
1		01140.0-00	THERMOSTAT KTO 011, 0-60°C	STEGO, THERMOSTAT KTO 011, 0-60°C NORMALLY CLOSED AND CLIP FOR 35MM DIN RAIL	17
1		06020.0-00	ANTI CONDENSATION HEATER	STEGO, CS 060 SERIES, 150 WATT, 120-240 VAC	18
1		PCI1753-IO-CAB(AEC)	PCI-1753-BE CARD	C3 AUTOMATION, WITH TERMINAL BOARD AND CABLE	19
1		KBD-6312	KEYBOARD WITH DRAWER	ADVANTECH	20
1		APC-3515	INDUSTRIAL PANEL PC MODEL APC-3515	APLEX TECH, 15" LCD, COXE 2 DUO T5450, 1.6GHZ, 1 GB DRAM DLIAL 10/100 MBPS LAN, 2 COM, 4 USR 2.0 PORTS, IPE 5, FRONT PANEL, STD BEZEL WITH CD ROM, 80 GB HARD DRIVE	21
1		D2663	HP D2663 DESKJET PRINTER	HP, DESKJET D2663COLOUR INKJET PRINTER, 150 WATT, 120-240 VAC	22
1		5822-I	DUPLEX RECEPTACLES 220VAC	SANA, RIYADH, 2POLE, 3WIRE, 20A 220V, IVORY.	23
1		3232-I	DUPLEX RECEPTACLES 110VAC	SANA, RIYADH, 2POLE, 3WIRE, 15A 127V, IVORY.	24
1		TPTE1-I	TELEPHONE JACK	SANA, RIYADH, RJ11, TELEPHONE JACK WALL PLATE	25
1		0734P09H1D1316 EXX6D2A	POWER QUALITY, SEL 734P	SEL, BAHRAIN, POWER QUALITY METER CL 0.2, 1A ALTERNATIVE P/N (0734P19H1D1316EXX6D2A)	26
1		RK 251 204-AP	BI-STABLE RELAY RXMVB2	ABB, RXMVB2, DC RATED VOLTAGE 125V	27
1		1X20 MODEL 2004 ELECTRON OR 60620	LAMP 127VAC OR 220VAC	ALRAED, FLUORESCENT LAMP, 20W, 60HZ. 127VAC OR 220VAC PANEL LAMP -230VAC, 50Hz	28
2		Z15G1307 OR AZ7310	LIMIT SWITCH	HIGHLY LIMIT SWITCH 15A 125/220 VAC LIMIT SWITCH WITH 10A 250V AC MAX	29

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289981	03 OF 04	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	A	C420	CD-289981	03 OF 04	00

NOTES	
1.	ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.
2.	PANEL IS CONSTRUCTED ACCORDING TO 31-TMSS-01.

LEGEND

GA : GENERAL ASSEMBLY
LA : LIST OF APPARATUS
RM : REVENUE METER

REFERENCE DRAWINGS

[illegible]

AS-BUILT BY _____ DATE _____

O	12/01	AM	DETAIL DESIGN	AM	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: AM CHECKED BY: AS SCALE: NONE
DATE STARTED _____ DATE COMPLETED _____
OPR'G. DEPT. _____ ENG. DEPT. _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED	APPROVAL/CERTIFICATION INFORMATION DOC NO. <u>E-123456</u> REV NO. <u>00</u>
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S/S 8833, GA AND LA DRAWING	
DCU PANEL, 1 PQ WITH RELAY AND 1 RM	
WITHOUT RELAY, 3P4W ADDAD	
QASEEM	SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289981	04 OF 04	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	A	C420	CD-289981	04 OF 04	00

00	01 OF 11	CD-289982	C420	P	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX		

NOTES UNLESS OTHERWISE SPECIFIED:

1.

THE TERMINATION RESISTOR MUST BE PRESENT IN EVERY PANEL BUT IT MUST BE CONNECTED TO XCOM11 BY SHORTING XCOM11:1, XCOM11:2, XCOM11:3 AND XCOM11: 4.
- 2

VT IS THE VOLTAGE TRANSFORMER
- 3

CTs & VTs ARE TO BE CONNECTED TO THE METERS VIA FT-SWITCH
- 4

H1 IS ANTI-CONDENSATION HEATER TO BE CONNECTED TO 127/220VAC
- 5

USE GROUP MARKER FOR GROUP MARKING
- 6

USE FERRULING FOR CABLE MARKING
- 7

FOR EXTERNAL WIRING OF THE PANELS REFER CABLE SCHEDULING OF THE SUBSTATIONS & FOR TESTING FOLLOW THE TEST DOCUMENTS
- 8

NEUTRAL SHOULD NOT BE CONNECTED TO TH1 THERMOSTAT
9.

CONNECTOR RESISTOR R4 BETWEEN TERMINALS 3 AND 4 OF XCOM1 AND GROUND TERMINAL 4 OF XCOM1 USING YELLOW GREEN WIRE.
- 10

ALL THE TERMINAL BLOCKS HAVING EXTERNAL WIRING CONNECTIONS LIKE VT.CT.AC/DC TERMINAL BLOCKS SHOULD HAVE WIRE CONNECTION ON THE SIDE OF TERMINAL BLOCK NOT CLOSE TO PANEL ACCESS DOOR
- 11

ALL THE FERRULES SHOULD BE OUTSIDE RACEWAY, NEAR CONNECTOR & EASILY READABLE WIHTOUT TURNING OR MOVING WIRES.
- 12

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE
- 13

FOR CONNECTIONS/FERRULING PLEASE FOLLOW THE TABLE ON SHEET 11
- 14

WHEN CONNECTING ELECTRICAL WIRES FOR THE RELAYS MAKE SURE TO CONNECT ON THE SIDE MARKED 'A' FOR ALL PIN NUMBERS
- 15

DC AUX.CONTACTS FOR MCB101 THRU MCB104 WITH RATING 130VDC 1A ARE DRY MECHANICAL ALARMS FOR DC MCB TRIP WITH 11 AS 'COM' & 12 AS 'NO'
- 16

TERMINAL 10 IN XC1 TO XC4 TO BE CLOSED IF CT CIRCUIT IS NOT EARTHED ANY OTHER PLACE

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	01 OF 11	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	P	C420	CD-289982	01 of 11	00

NOTES

LEGEND

REFERENCE DRAWINGS

DRAWING TITLE		DRAWING NO.	
DRAWING CONTROL SHEET		CD-289969	

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

الشركة السعودية للكهرباء

Saudi Electricity Company

DRAWN BY: MRA CHECKED BY: AS SCALE: NONE

DATE STARTED DATE COMPLETED

OPR'G. DEPT. ENG. DEPT.

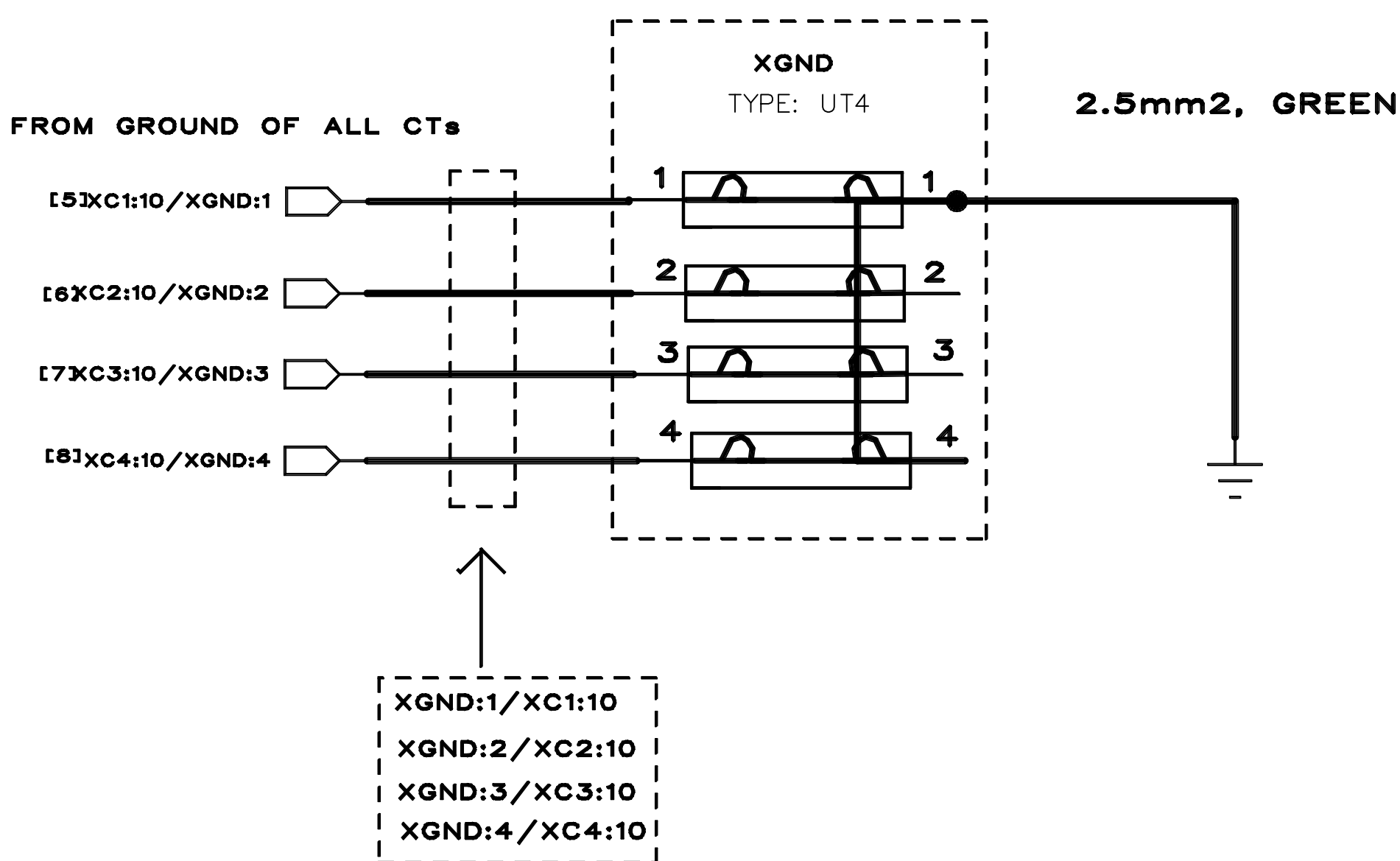
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APPROVAL/CERTIFICATION INFORMATION
DOC NO. E-123456 REV NO. 00

SCHEMATIC DIAGRAM, METERING PANEL WITH 4 REVENUE METERS WITHOUT RELAYS FOR AMR, S/S 8833

OASEEM SAUDI ARABIA

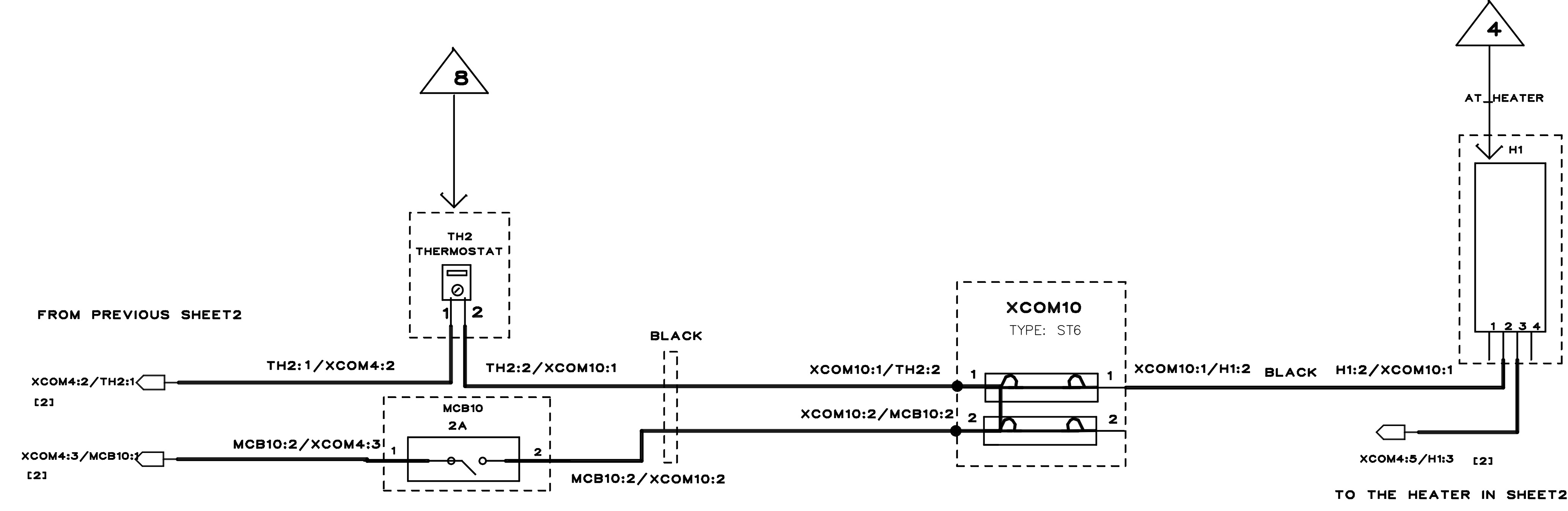
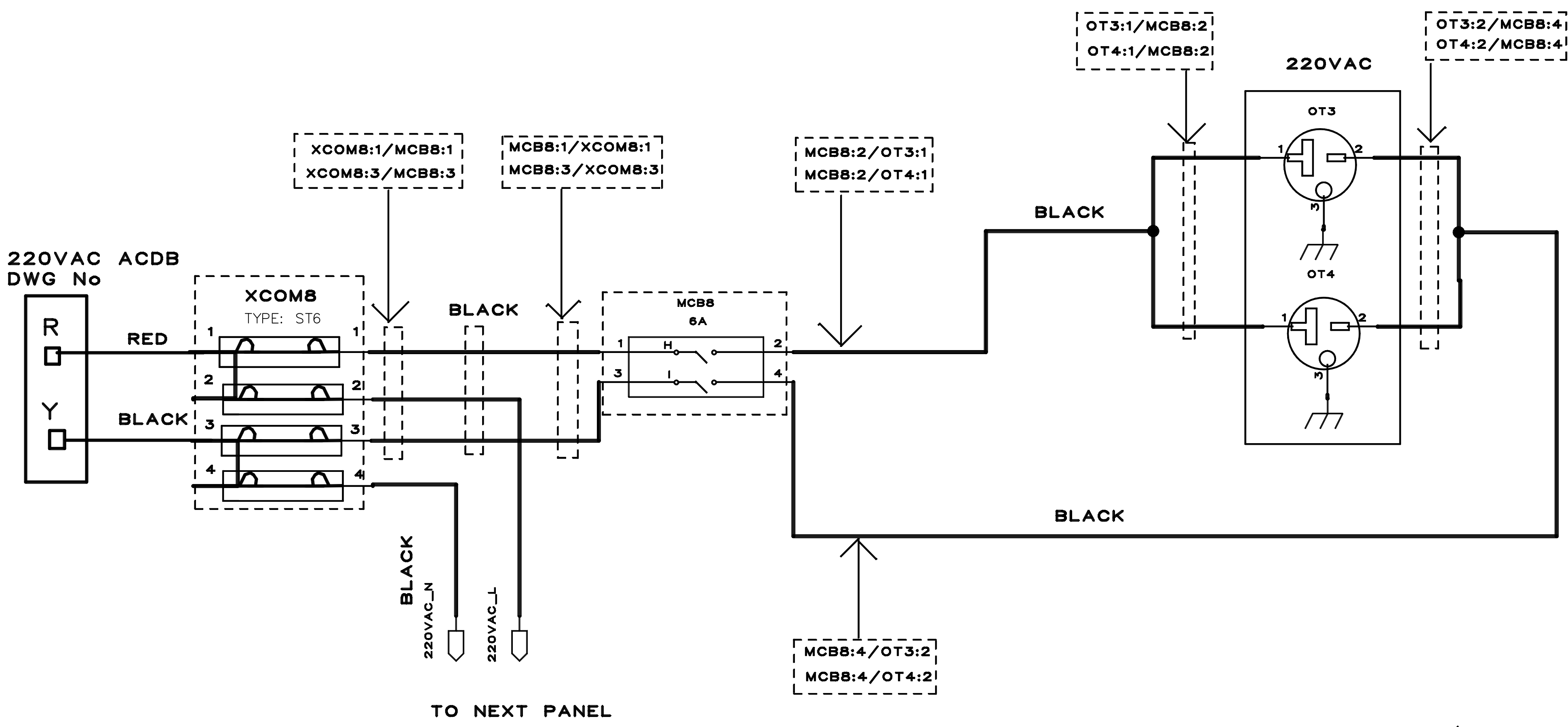
MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	02 OF 11	00



P	C420	CD-289982	02 OF 11	00
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SEC CAD-A 12004/031

00	11	03	OF	11	CD-289982	C420	P	INDEX	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX	NO.	NO.	NO.	NO.	NO.	NO.



MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	03 OF 11	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	P	C420	CD-289982	03 OF 11 00

NOTES

LEGEND

AT_HEATER – ANTI CONDENSATION
HEATER
H1 – ANTI CONDENSATION HEATER
OT3, OT4 – AC POWER OUTLET
ACDB – AC DISTRIBUTION BOARD

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS				
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD			

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Saudi Electricity Company

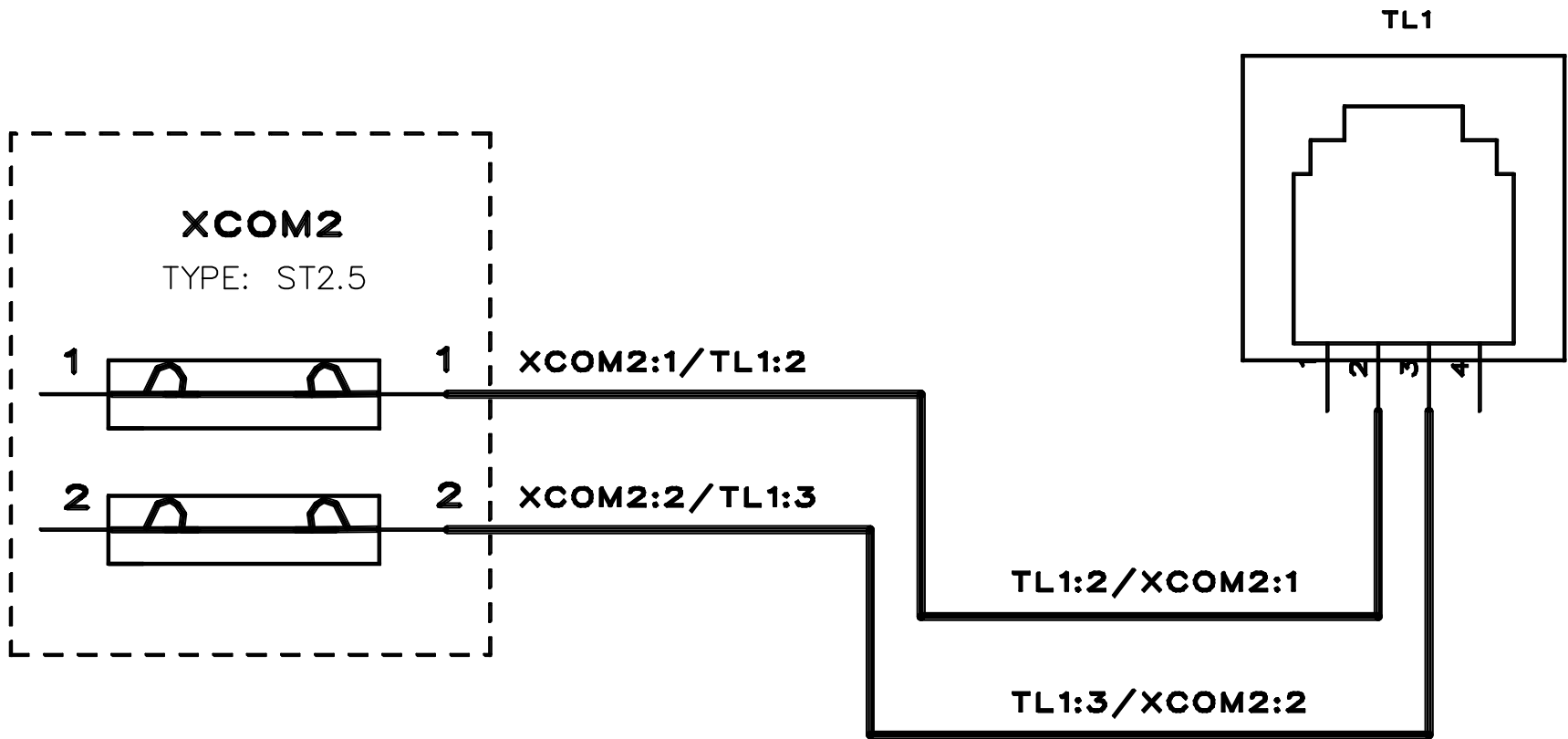
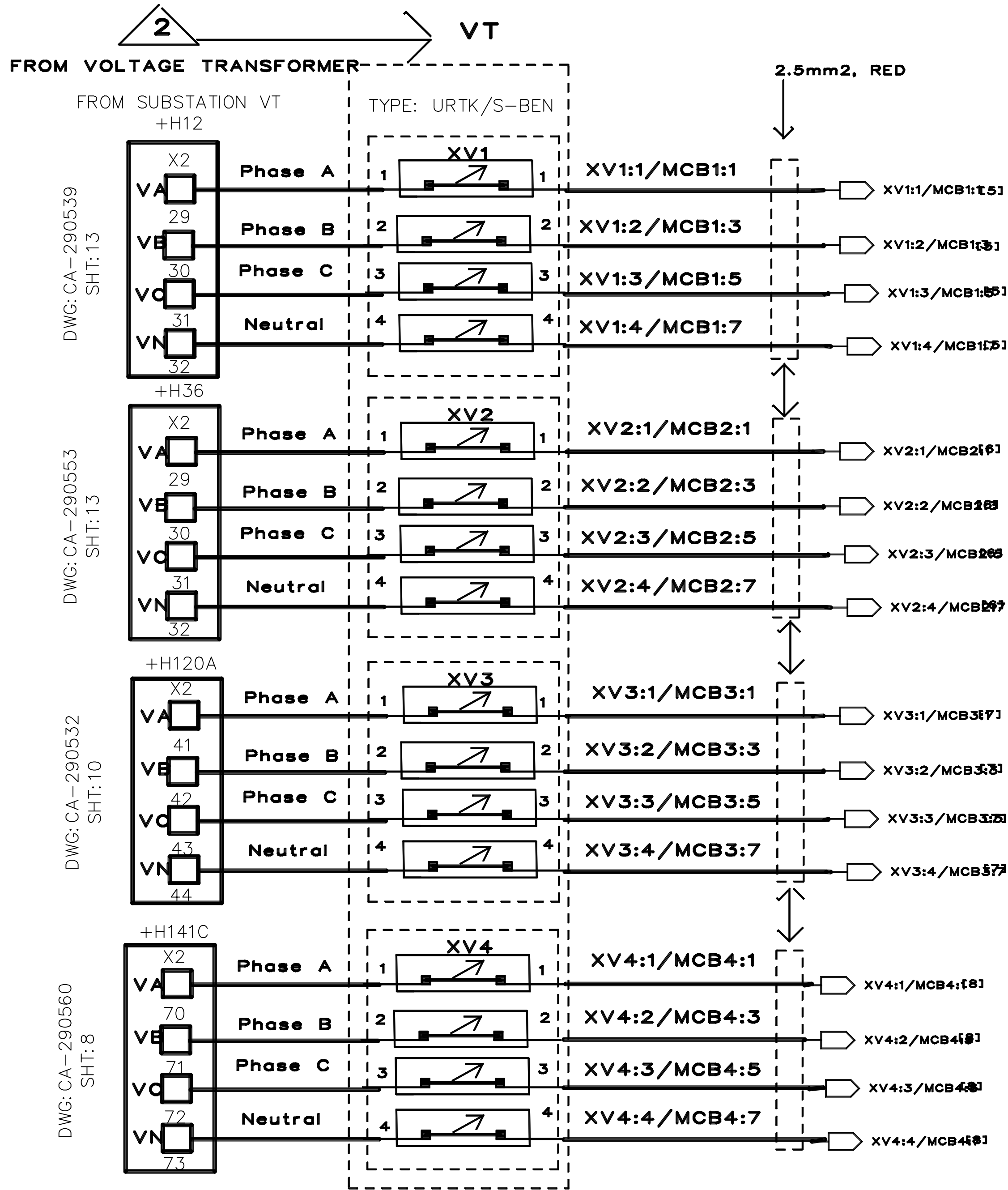
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OPR'G. DEPT.: ENG. DEPT.:

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APPROVAL/CERTIFICATION INFORMATION
DOC NO. E-123456 REV NO. 00

220VAC CONNECTIONS INSIDE PANEL
ANTI-CONDENSATION HEATER WITH MANUAL
OVERRIDE SW, S/S 8833
QASEEM SAUDI ARABIA

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00	11	04	CD-289982	C420	P	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX			



NOTES

LEGEND

PSTN – PUBLIC SWITCHED TELEPHONE NETWORK

VT – VOLTAGE TRANSFORMER PT-SECONDARY

TL – TELEPHONE JACK

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS		
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD	

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Saudi Electricity Company

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DATE STARTED: DATE COMPLETED:

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DOC NO. E-123456 REV NO. 00

VT CONNECTIONS INSIDE PANEL

TELEPHONE LINE CONNECTIONS INSIDE PANEL

S/S 8833

OASEEM SAUDI ARABIA

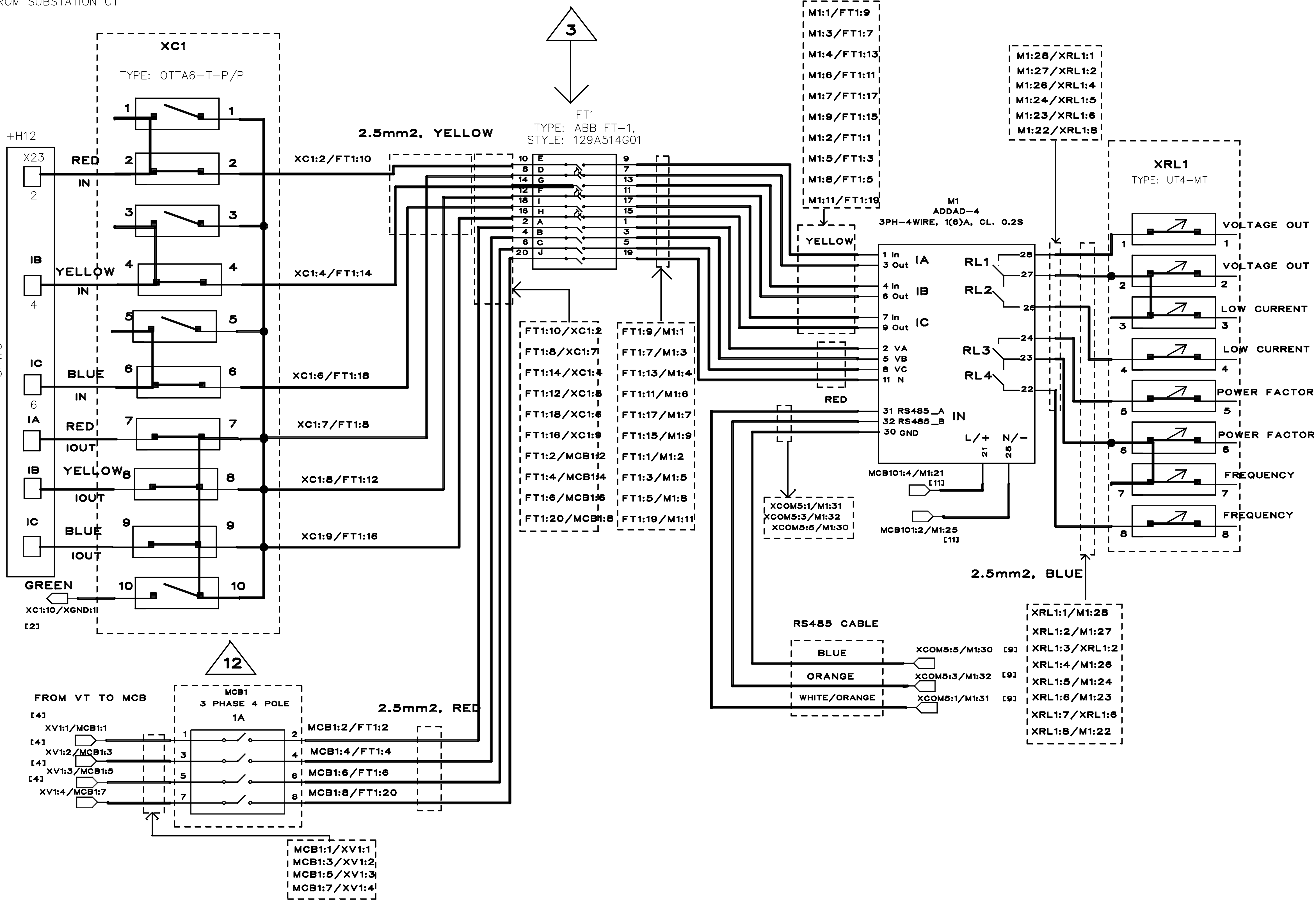
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AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	04 OF 11	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	P	C420	CD-289982	04 OF 11 00

00	05 OF 11	CD-289982	C420	P	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX		

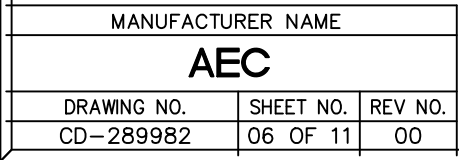
FROM SUBSTATION CT

DWG: CA-290539
SHT: 8



MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	06 OF 11	00

DWG: CA-290553
SHT: 8



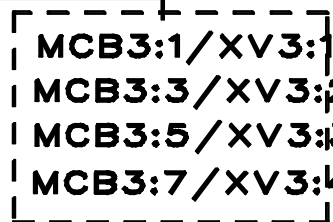
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11131060	P	C420	CD-289982	06 OF 11	00

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
B	0100	05 000000	00 05 11	00

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MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	07 OF 11	00

SHT:7

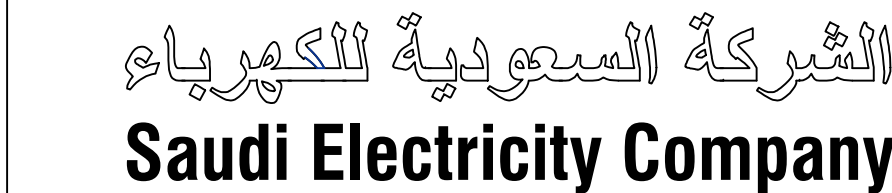


INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C420	CD-289982	07 OF 11	00

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MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	08 OF 11	00

DWG: CA-290559
SHT: 7



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S/S 8833

QASEEM	SAUDI ARABIA
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SEC CAD-A 12004/03
DMS VECTOR

LEGEND

XRL - O/P CONTACT FROM RELAY IN
REVENUE METER

REFERENCE DRAWINGS

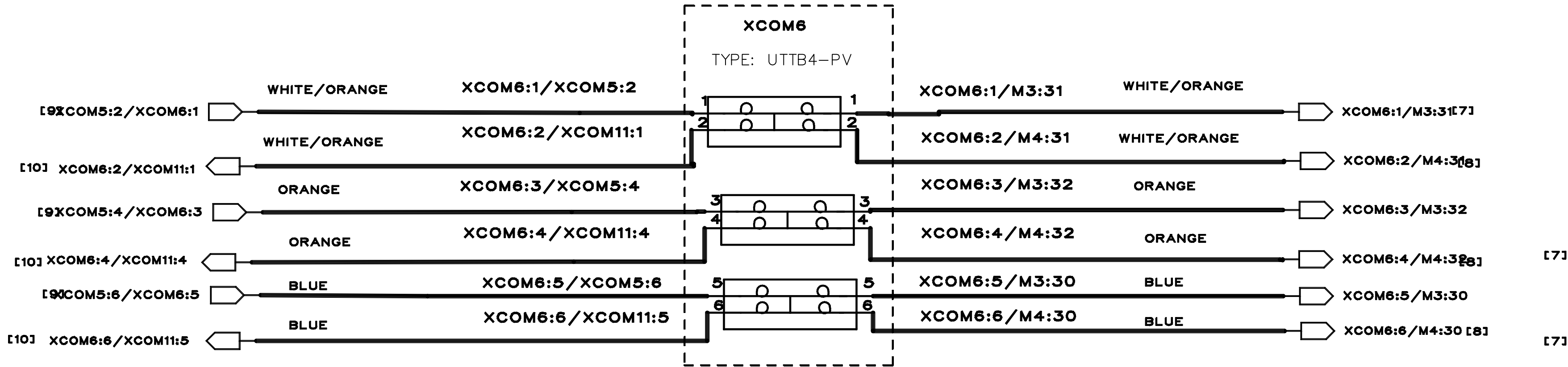
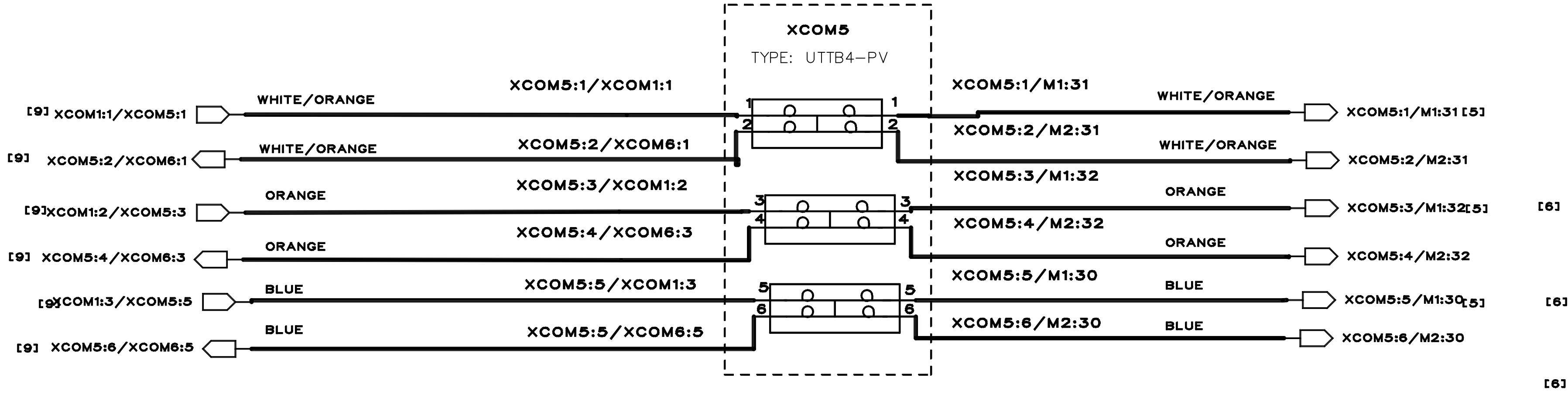
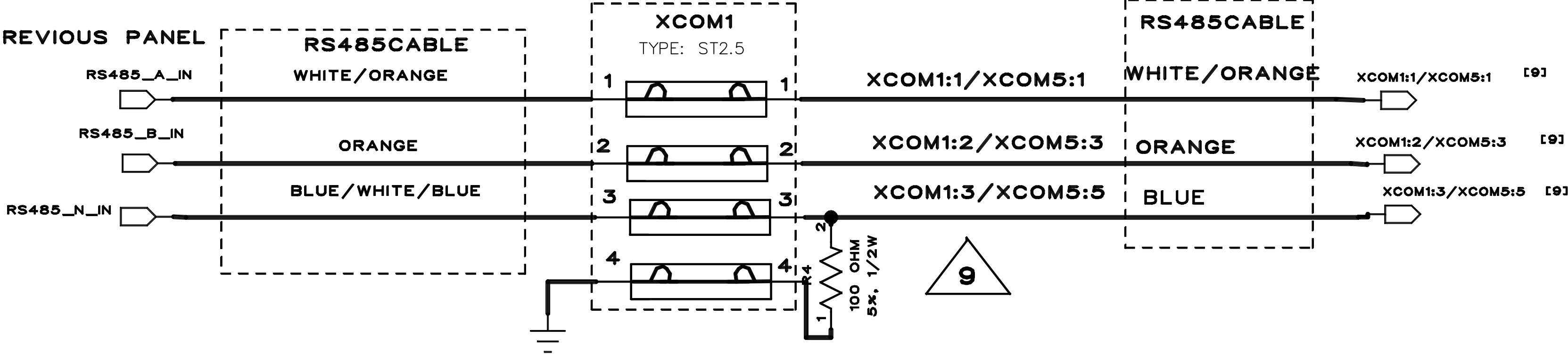
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AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

00	11	09	CD-289982	C420	P	11131060	
REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX	JOB ORDER NO.		

FROM MASTER PC OR PREVIOUS PANEL



NOTES

LEGEND

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.

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Saudi Electricity Company

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COMMUNICATION CONNECTIONS INSIDE PANEL

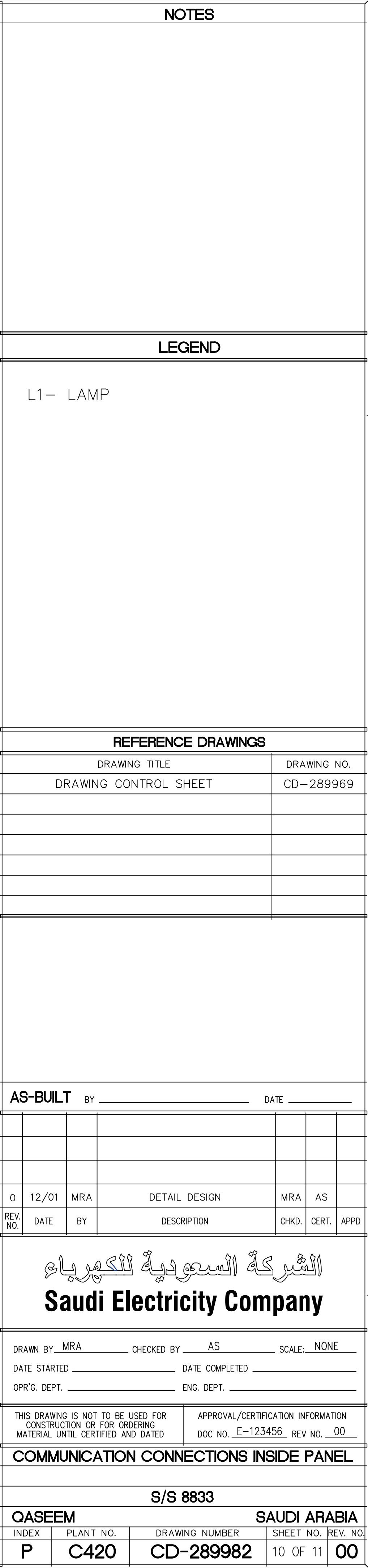
S/S 8833

OASEEM SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	09 OF 11	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	P	C420	CD-289982	09 OF 11 00

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	10 OF 11	00



11131060	P	C420	CD-289982	11 OF 11	00
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289982	11 OF 11	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	P	C420	CD-289982	11 OF 11 00

NOTES

LEGEND

XRDC – O/P OF AUXILIARY CONTACT
MONITORING DC MCB FOR
METERS

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS				
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD			

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DOC NO. E-123456 REV NO. 00

DC VOLTAGE
CONNECTIONS INSIDE PANEL
S/S 8833
QASEEM SAUDI ARABIA

DC DISTRIBUTION BOARD

DWG No

+DCDB

125VDC SS-DC_VOLT

DWG: CD-290625

SHT: 43

QA4.18

TO NEXT PANEL

TO NEXT PANEL

XDCP:1/ MCB101:3
XDCP:2/ MCB102:3
XDCP:3/ MCB103:3
XDCP:4/ MCB104:3

XDCP
TYPE : ST6

XDCN
TYPE : ST6

XDCN:1/ MCB101:1
XDCN:2/ MCB102:1
XDCN:3/ MCB103:1
XDCN:4/ MCB104:1

DC CIRCUIT BREAKER

GREY

TYPE: UT4-MT

XRDC

13

13

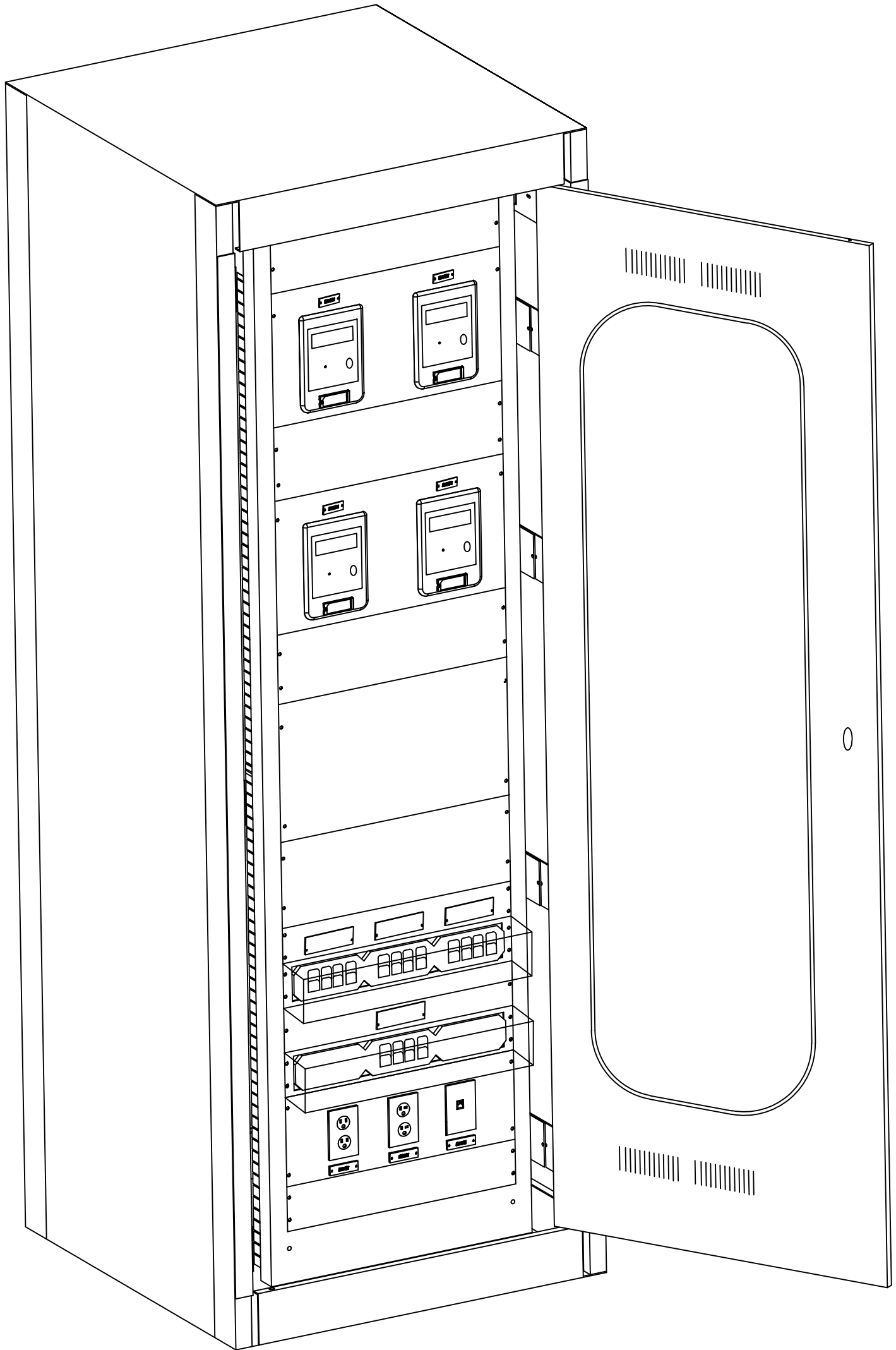
MCB101:1/ XDCN:1
MCB101:3/ XDCP:1
MCB102:1/ XDCN:2
MCB102:3/ XDCP:2
MCB103:1/ XDCN:3
MCB103:3/ XDCP:3
MCB104:1/ XDCN:4
MCB104:4/ XDCP:4

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JOB ORDER NO.	11131060	A	C420	CD-289983	01 OF 04	00
REV NO.	REV NO.	SHEET NO.	DRAWING NO.	PLANT NO.	INDEX	00

PANEL SPECIFICATIONS :

1. THE PANEL IS MADE OF 2MM THICKNESS STEEL SHEET INCLUDING THE DOORS.
2. PANEL’S BOTTOM COVERED BY THREE PLATES EACH FABRICATED FROM 3MM THICKNESS STEEL SHEET.
3. THE PANEL IS POWDER COATED BY RAL 7038 FROM OUTSIDE AND RAL 9003 FROM INSIDE.
4. THE PANEL IS FABRICATED ACCORDING TO CLAUSE NO. 4.1 OF 31-TMSS-01.



DESCRIPTION
METERING PANEL, FOUR METERS 3P4W 1(6)A WITHOUT CHANGE OVER CONTACTS

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289983	01 OF 04	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	A	C420	CD-289983	01 of 04	00

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.
2. PANEL IS CONSTRUCTED ACCORDING TO 31-TMSS-01.
3. THE PANEL IS POWDER COATED BY RAL 7038 FROM OUTSIDE AND RAL 9003 FROM INSIDE.

LEGEND

GA : GENERAL ASSEMBLY
LA : LIST OF APPARATUS
M : REVENUE METER

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	AM	DETAIL DESIGN	AM	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

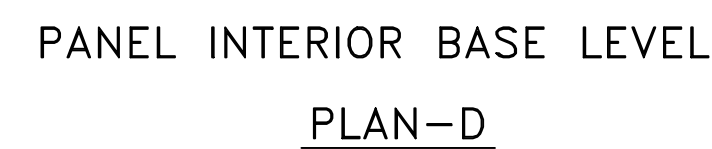
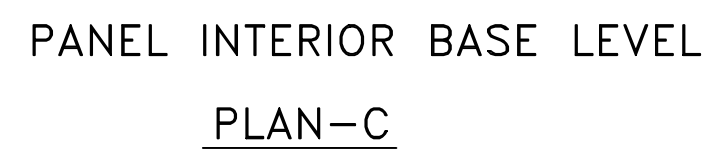
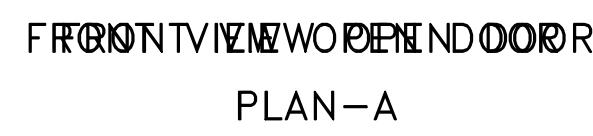
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Saudi Electricity Company

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DATE STARTED DATE COMPLETED
OPR'G. DEPT. ENG. DEPT.

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APPROVAL/CERTIFICATION INFORMATION
DOC NO. E-123456 REV NO. 00

S/S 8833, GA AND LA DRAWING
METERING PANEL, 4 M, 3P4W ADDAD
WITHOUT CHANGE OVER CONTACTS
QASEEM SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289983	02 OF 04	00



- ## NOTES
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.
 2. PANEL IS CONSTRUCTED ACCORDING TO 31-TMSS-01.
 3. LIMIT SWITCH LOCATION IS CHANGEABLE ACCORDING TO PANEL MANUFACTURER STANDARD.
 4. GLASS SHEET THICKNESS: 5MM
 5. GROUND BUS CROSS SECTION: 5MM X 30MM
 6. COPPER BRAID SIZE: 12MM SQ.

LEGEND

GA : GENERAL ASSEMBLY
LA : LIST OF APPARATUS
M : REVENUE METER

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT

BY _____

DATE _____

0	12/01	AM	DETAIL DESIGN	AM	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APP.

الشركة السعودية للكهرباء
Saudi Electricity Company

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DATE STARTED _____ DATE COMPLETED _____
OPR'G. DEPT. _____ ENG. DEPT. _____

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S/S 8833, GA AND LA DRAWING	
METERING PANEL, 4 M, 3P4W ADDAD	
WITHOUT CHANGE OVER CONTACTS	
QASEEM	SAUDI ARABIA


JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	A	C420	CD-289983	02 OF 04	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.
11131060	A	C420	CD-289983	03 OF 04	00

PARTS LIST					
QTY	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPECIFICATION	ITEM
4	SE455	900-003524	ADDAD-4 CLO.2S , TOP ASSEMBLY, RS485 1(6)A	AEC, RIYADH	1
1		FR2H014014014N	FT-SWITCH KIT, 3	ABB RIYADH, KIT OF 3 FT-SWITCH, WITH SCREWS, COVER AND MOUNTING PLATE 2U	2
1		FR2H000014000N	FT-SWITCH KIT, 1	ABB RIYADH, KIT OF 1 FT-SWITCH, WITH SCREWS, COVER AND MOUNTING PLATE 2U	3
26		3031487	SPRING -CAGE FEED-THROUGH MODULAR TERMINAL BLOCK, ST6	PHOENIX	4
20		3031212	SPRING -CAGE FEED-THROUGH MODULAR TERMINAL BLOCK, ST2.5	PHOENIX	5
44		3046139	DISCONNECT TYPE SCREW CONNECTION FEED-THROUGH MODULAR TERMINAL BLOCK UT4-MT.	PHOENIX	6
44		0790462	DISCONNECT TYPE TERMINAL BLOCK OTTA 6-T-P/P	PHOENIX	7
5		3044102	SCREW CONNECTION TYPE FEED-THROUGH MODULAR TB UT4	PHOENIX	8
7		3044733	FEED-THROUGH MODULAR TERMINAL BLOCK 4 CONNECTIONS UTTB4-PV	PHOENIX	9
18		0309086	DISCONNECT TYPE TERMINAL BLOCK URTK/S-BEN	PHOENIX	10
4		25007	AC MCB, 3P4P 1A	SCHNEIDER, C60H, C CURVE, THREE PHASE 4 POLE, 1A	11
2		25855	AC MCB, 1P2P 6A	SCHNEIDER, C60H, B CURVE, SINGLE PHASE 2 POLE, 6A	12
1		25640	AC MCB, 1P1P 2A	SCHNEIDER, C60H, C CURVE, SINGLE PHASE 1 POLE, 2A	13
4		MGN61521	DC MCB, 2P 1A	SCHNEIDER, C32H, U CURVE, 2 POLE DC MCB, 1A	14
4		26924	AUXILIARY CONTACT, TYPE "OF"	SCHNEIDER,	15
1		01140.0-00	THERMOSTAT KTO 011, 0-60°C	STEGO, THERMOSTAT KTO 011, 0-60°C NORMALLY CLOSED AND CLIP FOR 35MM DIN RAIL	16
1		06020.0-00	ANTI CONDENSATION HEATER	STEGO, CS 060 SERIES, 150 WATT, 120-240 VAC	17
1		5822-I	DUPLEX RECEPTACLES 220VAC	SANA, RIYADH, 2POLE, 3WIRE, 20A 220V, IVORY.	18
1		3232-I	DUPLEX RECEPTACLES 110VAC	SANA, RIYADH, 2POLE, 3WIRE, 15A 127V, IVORY.	19
1		TPTE1-I	TELEPHONE JACK	SANA, RIYADH, RJ11, TELEPHONE JACK WALL PLATE	20
1		1X20 MODEL 2004 ELECTRONE OR 60620	LAMP 127VAC OR 220VAC	ALRAED, FLUORESCENT LAMP, 20W, 60HZ. 127VAC OR 220VAC PANEL LAMP -230VAC, 50Hz	21
2		Z15G1307 OR AZ7310	LIMIT SWITCH	HIGHLY LIMIT SWITCH 15A 125/220 VAC LIMIT SWITCH WITH 10A 250V AC MAX	22

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289983	03 OF 04	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	A	C420	CD-289983	03 OF 04	00

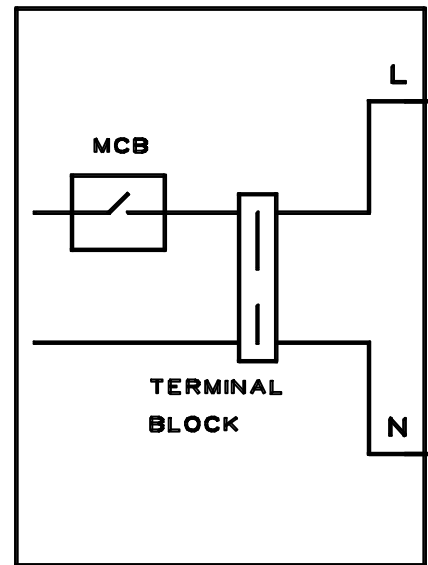
NOTES									
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED.									
2. PANEL IS CONSTRUCTED ACCORDING TO 31-TMSS-01.									
LEGEND									
GA : GENERAL ASSEMBLY									
LA : LIST OF APPARATUS									
M : REVENUE METER									
REFERENCE DRAWINGS									
DRAWING TITLE						DRAWING NO.			
DRAWING CONTROL SHEET						CD-289969			
AS-BUILT BY _____ DATE _____									
0	12/01	AM	DETAIL DESIGN				AM	AS	
REV. NO.	DATE	BY	DESCRIPTION				CHKD.	CERT.	APPD
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DRAWN BY: AM CHECKED BY: AS SCALE: NONE									
DATE STARTED: _____ DATE COMPLETED: _____									
OPR'G. DEPT. _____ ENG. DEPT. _____									
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S/S 8833, GA AND LA DRAWING									
METERING PANEL, 4 M, 3P4W ADDAD									
WITHOUT CHANGE OVER CONTACTS									
QASEEM					SAUDI ARABIA				
INDEX	PLANT NO.		DRAWING NUMBER			SHEET NO.		REV. NO.	
A	C420		CD-289983			03 OF 04		00	

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289983	04 OF 04	00

الشركة السعودية للكهرباء
Saudi Electricity Company

00	02	01	CD-289984	C420	P	11131060	JOB ORDER NO.
REV NO.	SHEET NO.	OF	DRAWING NO.	PLANT NO.	INDEX	INDEX	

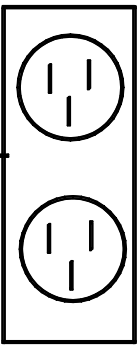
220VAC/127VAC
AC DISTRIBUTION BOARD
DWG #



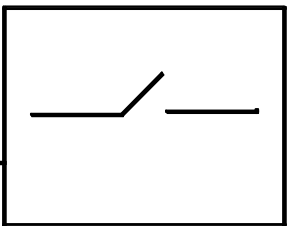
TERMINAL BLOCK

2 POLE MCB 6A

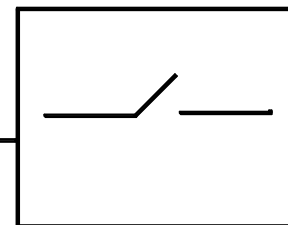
120VAC OUTLET



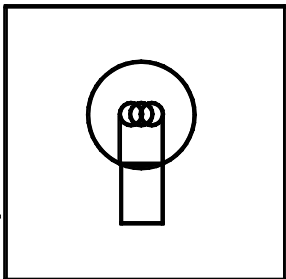
FRONT DOOR SWITCH



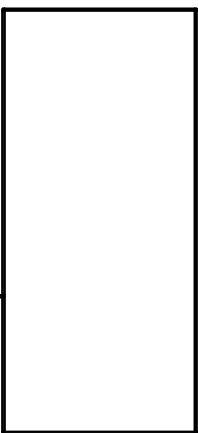
BACK DOOR SWITCH



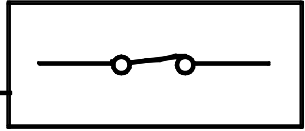
LAMP



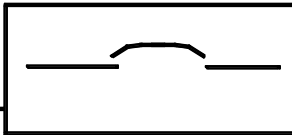
AT HEATER



THERMOSTAT

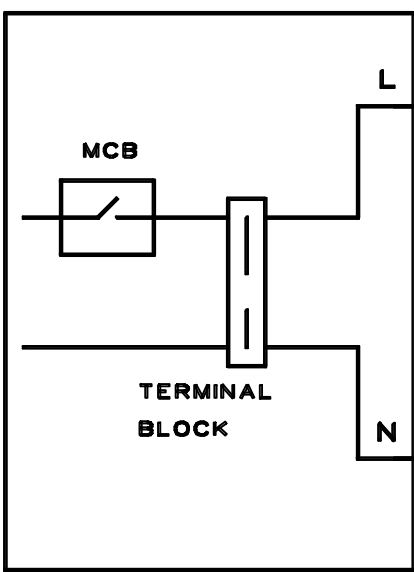


OVER RIDE SWITCH



2

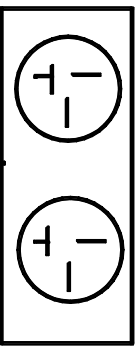
220VAC INPUT
AC DISTRIBUTION BOARD
DWG #



TERMINAL BLOCK

2 POLE MCB 6A

220VAC OUTLET



NOTES

1. AC DISTRIBUTION BOARD DRAWING NUMBER TO BE IDENTIFIED AT SITE.
2. PANEL HAS PROVISION FOR BOTH 127VAC & 220VAC CONNECTION AS WELL. CONNECTION CAN BE MADE DEPENDING ON AVAILABILITY.
3. BUT THE S/S PRIMARY AC VOLTAGE SHOULD BE IDENTIFIED.

LEGEND

1. MCB – MINIATURE CIRCUIT BREAKER
2. AT – HEATER – ANTI CONDENSATION HEATER

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS		
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD	

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MRA CHECKED BY: AS SCALE: NONE
DATE STARTED: DATE COMPLETED: OPR'G. DEPT.: ENG. DEPT.:

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED APPROVAL/CERTIFICATION INFORMATION DOC NO. E-123456 REV NO. 00

127VAC/220VAC SINGLE LINE DIAGRAM

S/S 8833

OASEEM SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289984	01 OF 02	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	P	C420	CD-289984	01 of 02 00

JOB ORDER NO.	11131060	P	C420	CD-289984	02 OF 02	00
INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.		

125VDC
DC DISTRIBUTION BOARD
DWG #

TERMINAL BLOCKS

2 POLE DC MCB 2A

NOTE 2

BISTABLE RELAY

PANEL PC

DIGITAL INPUT/
OUTPUT BOARD

RS232/RS485 CONVERTER

NOTE 3

GSM MODULE

PQ METER

NOTES

1. AC DISTRIBUTION BOARD DRAWING NUMBER TO BE IDENTIFIED AT SITE.
2. BISTABLE RELAY PRESENT ONLY FOR METER SWITCHING
3. TO BE CONNECTED ONLY IF PSTN IS NOT AVAILABLE IN S/S AS BACK UP TO LAN COMMUNICATION

LEGEND

COM – SERIAL PORT
DP – DIAL UP PORT
LP – LAN PORT

PANEL PC – INDUSTRIAL PANEL PC MODEL APC-3515
BISTABLE RELAY – BI-STABLE RELAY RXMVB2
DC/DC CONVERTER – C~CAN, HFR24/50-125
PQ METER – POWER QUALITY, SEL 734P

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT BY _____ DATE _____

0	12/01	MRA	DETAIL DESIGN	MRA	AS	
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MRA CHECKED BY: AS SCALE: NONE
DATE STARTED: _____ DATE COMPLETED: _____
OPR'G. DEPT.: _____ ENG. DEPT.: _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED	APPROVAL/CERTIFICATION INFORMATION DOC NO. E-123456 REV NO. 00
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125VDC SINGLE LINE DIAGRAM

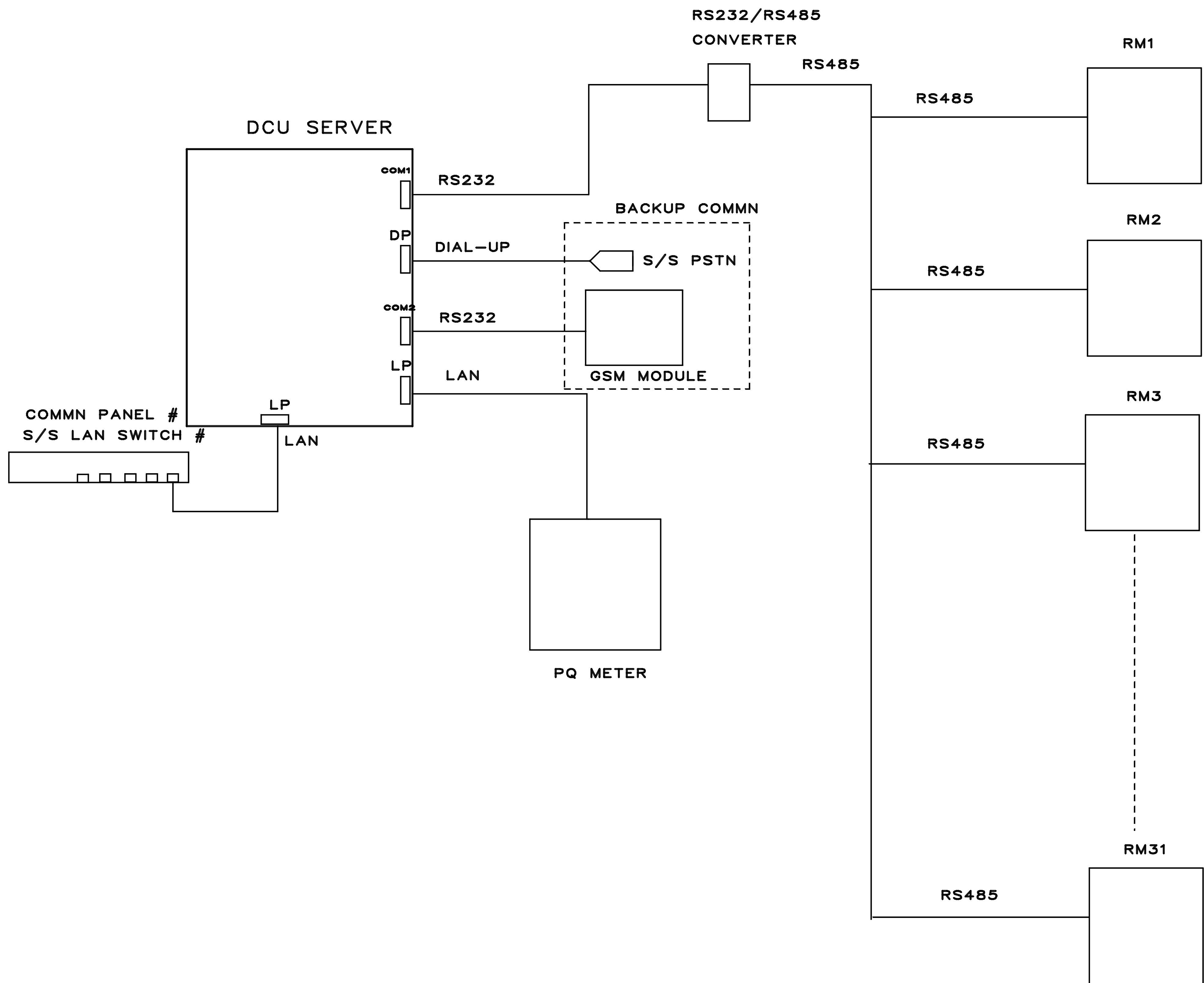
S/S 8833

OASEEM SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289984	02 OF 02	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
11131060	P	C420	CD-289984	02 of 02 00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NO.	SHEET NO.	REV NO.
111131060	T	C420	CD-289985	01 OF 01	00



NOTES
<ol style="list-style-type: none"> 1. PRIMARY BACKUP COMMUNICATION IS DIAL UP. BUT IF TELEPHONE IS NOT AVAILABLE THEN GSM IS USED. 2. UPTO 32 METERS CAN BE CONNECTED ON SINGLE RS485 NETWORK 3. LAN SWITCH #/COMM PANEL # TO BE IDENTIFIED AT SITE BY AUYA

LEGEND
COM - SERIAL PORT
DP - DIAL UP PORT
LP - LAN PORT

REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	CD-289969

AS-BUILT				BY _____	DATE _____		
O	12/01	MRA	DETAIL DESIGN			MRA	AS
REV. NO.	DATE	BY	DESCRIPTION			CHKD.	CERT. APPD

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY MRA CHECKED BY AS SCALE: NONE
DATE STARTED _____ DATE COMPLETED _____
OPR'G. DEPT. _____ ENG. DEPT. _____

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COMMUNICATION SYSTEM DIAGRAM	
S/S 8833	
QASEEM	SAUDI ARABIA

MANUFACTURER NAME		
AEC		
DRAWING NO.	SHEET NO.	REV NO.
CD-289985	01 OF 01	00

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131060	T	C420	CD-289985	01 of 01	00